

# MAINE ATLANTIC SALMON COMMISSION

*AUGUSTA, MAINE*

## DENNYS RIVER CORRIDOR LAND MANAGEMENT PLAN

FINAL

*JULY 2003*

*Prepared by:*

***Kleinschmidt***  
*Energy & Water Resource Consultants*

MAINE ATLANTIC SALMON COMMISSION  
AUGUSTA, MAINE

DENNYS RIVER CORRIDOR LAND MANAGEMENT PLAN

FINAL

*JULY 2003*

*Prepared by:*

***Kleinschmidt***  
*Energy & Water Resource Consultants*

**MAINE ATLANTIC SALMON COMMISSION  
AUGUSTA, MAINE**

**DENNYS RIVER CORRIDOR LAND MANAGEMENT PLAN**

**TABLE OF CONTENTS**

EXECUTIVE SUMMARY .....	V
1.0 INTRODUCTION .....	1
1.1 Land Management Plan Background and Purpose .....	2
1.2 Funding .....	3
1.3 Land Management Plan Goals and Objectives .....	3
1.4 Atlantic Salmon Habitat Protection .....	4
1.4.1 Life History and Habitat Requirements .....	4
2.0 GENERAL DESCRIPTION OF REGION AND CORRIDOR MANAGEMENT AREA.....	6
2.1 Description of the Corridors .....	6
2.2 Early History .....	6
2.3 Recent History .....	7
3.0 INVENTORY OF EXISTING RESOURCES.....	8
3.1 Geologic and Soil Resources .....	8
3.2 Topography .....	9
3.3 Water Quality .....	9
3.4 Flows .....	10
3.5 Aquatic Resources .....	11
3.6 Terrestrial Resources .....	13
3.7 Threatened and Endangered Species .....	13
3.8 Exemplary Natural Communities/Significant Habitats .....	14
3.9 Land Use .....	14
3.10 Timber and Forestry Operations .....	14
3.11 Agriculture .....	16
3.12 Recreation .....	16
3.13 Cultural Resources .....	17
3.14 Watershed Development & Stresses .....	17
4.0 MANAGEMENT GUIDELINES .....	20
4.1 Determination of Resource Management Zones.....	20
4.2 Purpose of Resource Management Zones.....	21
4.3 Resource Management Zone Definitions.....	21
4.3.1 Habitat Protection Zone .....	23
4.3.2 Limited Use Zone .....	27
4.3.3 General Use Zone .....	27
4.4 Functions of Habitat Protection Zones .....	27
4.5 Width of Resource Management Zones.....	28
4.6 Allowable Uses By Zone .....	30

## Table of Contents (cont'd)

4.6.1	Habitat Protection Zone Allowable Uses.....	30
4.6.2	Limited Use Zone Allowable Uses.....	31
4.6.3	General Use Zones Allowable Uses .....	32
4.7	Resource Management Zone Variances.....	33
5.0	PUBLIC ACCESS .....	35
5.1	Current Access to the Corridors.....	35
5.1.1	Road Maintenance .....	36
5.1.2	Gates .....	36
5.2	Future Access.....	37
5.3	Recreational Access.....	37
6.0	OTHER LAND USES .....	41
6.1	Gravel Pit Agreement with the Town of Dennysville .....	41
6.2	Water Withdrawals .....	41
6.3	Structures .....	41
7.0	LONG-TERM FORESTRY OBJECTIVES .....	43
7.1	Timber Cutting.....	43
7.1.1	Exceptions/Stand Management Considerations.....	43
7.1.2	Cutting Standards.....	45
7.2	Chemical Applications.....	46
7.3	Logging Road Development.....	47
7.4	Fir Tipping .....	48
8.0	LAND MANAGEMENT PLAN IMPLEMENTATION, STEWARDSHIP AND ENFORCEMENT .....	49
8.1	Steward Position .....	50
8.2	Advisory Group .....	51
8.3	Operations & Maintenance Costs .....	51
8.3.1	Fir Tipping .....	52
8.3.2	Road Maintenance .....	52
8.3.3	Illegal Trash Dumping .....	52
8.3.4	Boundary Line Maintenance.....	53
8.3.5	Forest Management.....	53
8.3.6	Fire Control.....	54
8.4	Instream and RMZ Restoration Opportunities.....	54
8.4.1	Research and Experiments.....	54
8.4.2	Restoration Opportunities .....	55
9.0	INTEGRATED DOCUMENTS .....	56
9.1	Atlantic Salmon Commission Dennys River Instream Habitat Plan .....	56
9.2	Dennys River Nonpoint Source Watershed Survey.....	56
9.3	Dennys River Watershed Council Strategic Plan .....	56
9.4	Dennys River Water Management Plan.....	57
9.5	Dennys River 319 Nonpoint Source Pollution Watershed Management Plan .....	57
10.0	PLAN UPDATES, MONITORING AND REVISIONS.....	60

11.0	GLOSSARY OF TERMS .....	61
12.0	LITERATURE CITED .....	66

### **LIST OF TABLES**

Table 1.	Functions of HPZ, LUZ and GUZ .....	28
Table 2.	Allowable Uses Within the Resource Management Zones.....	34
Table 3.	Staffing and Budget Requirements .....	51
Table 4.	Yearly Road Maintenance and Bridge Inspection Budget.....	52

### **LIST OF FIGURES**

Figure 1.	Mean Monthly Flows in the Dennys River from 1955-2001 From the USGS Gaging Station. NOTE: Managed flow via Meddybemps Dam.....	11
Figure 2.	Percentage of Resource Management Zones by Type within the Corridors .....	23
Figure 3.	Decision-Making/Communication Flow Chart.....	49

### **LIST OF APPENDICES**

A.	Resource Maps & Management Zones
B.	List of Advisory Group Members
C.	Public Meeting Minutes
D.	ASC Administrative Policy Regarding Land Management
E.	Agreement with Town of Dennysville
F.	Steward Position Description

## ACKNOWLEDGEMENTS

Technical review and input was received from the members of the “Advisory Group”:

Marty Anderson, NOAA Fisheries  
Barbara Arter, BSA Consulting  
Greg Beane, Maine Department of Environmental Protection  
Ron Brokaw, Inland Fisheries & Wildlife  
Molly Docherty, Maine Natural Areas Program  
Jay Hall, Department of Conservation, Bureau of Parks & Lands  
Steven Koenig, Project SHARE  
Maurry Mills, Moosehorn National Wildlife Refuge  
Morten Moesswilde, Department of Conservation, Maine Forest Service  
Nate Pennell, Washington County Soil & Water Conservation District  
Joel Pickelner, Quoddy Regional Land Trust  
Jon Reisman, Town of Cooper  
Tom Schaeffer, Inland Fisheries & Wildlife  
Matt Scott, Sportsman’s Alliance of Maine  
Rob Scribner, Downeast Canoe & Kayak  
Arthur Spiess, Maine Historic Preservation Commission  
Barbara Vickery, The Nature Conservancy  
Joe Wiley, Department of Conservation, Bureau of Parks and Lands

This Plan is a result of collaboration among a diverse group of stakeholders. Comments, references, technical information and feedback were received from the public and from numerous state and federal agencies, municipalities, nonprofit conservation organizations, and industry representatives during the course of developing this Plan. We thank these organizations and individuals which are too numerous to list. However, we would like to specifically acknowledge Jay Hall for providing literature, examples of functionally similar land management plans and expertise in the development of this Plan. Also, Gary Donovan and International Paper, Morten Moesswilde and the Maine Forest Service and Joe Wiley and the Bureau of Parks and Lands for their expertise in forest management recommendations and providing technical data which was crucial in the development of the three land use types.

Maurry Mills and the Dennys River Watershed Council for assisting with meeting arrangements and for encouraging local input to this Plan.

All of the members of the Advisory Group who has taken the time to review, edit and submitted comments on this Plan.

This document should be cited as:

Kleinschmidt Associates. 2003. Dennys River Corridor Land Management Plan. Final Plan to the Maine Atlantic Salmon Commission, Augusta, Maine, by Kleinschmidt Associates, Pittsfield, Maine.

**MAINE ATLANTIC SALMON COMMISSION  
AUGUSTA, MAINE**

**DENNYS RIVER CORRIDOR LAND MANAGEMENT PLAN**

***EXECUTIVE SUMMARY***

The primary objective of the Maine Atlantic Salmon Commission (ASC) is to manage, protect, and restore populations of Atlantic salmon in Maine watersheds, including populations listed as endangered under the ESA. The protection of salmon habitat is essential to the restoration effort. Through a partnership with Lands for Maine's Future, the ASC acquired over 4700 acres of land from the Nature Conservancy and International Paper Company in the Dennys River watershed. These lands abut Atlantic salmon habitat in the Dennys River and Cathance Stream. These lands, known collectively as the Dennys River Corridor, will be managed by the ASC primarily to protect and enhance salmon habitat and water quality in the Dennys River and its tributaries. The ASC will allow multiple uses, such as wildlife habitat and population management; hunting, trapping, fishing, and other land and water based recreation; research and education; and forest production, that are consistent with its primary goal of restoring the salmon.

This Land Management Plan (LMP) describes the existing resources within the Corridors, and ASC's objectives and policies for managing land uses as they relate to those resources. The LMP applies three protective Resource Management Zones (RMZs) that designate acceptable uses within the Corridor. Land management in the RMZs is designed to: minimize negative impacts to water quality and salmon habitat, to protect riparian values for other wildlife, and to preserve the visual integrity and recreational opportunities of the Corridor.

This LMP provides timber harvesting strategies that allow for the removal of trees from the project area outside the most sensitive habitat protection zones. While forestry is not recommended directly adjacent to the Dennys River, Cathance Stream, and their tributaries, it is recognized as a historically significant and economically viable activity that, if properly planned and carried-out, is not inconsistent with the goal of salmon habitat conservation. Limited forestry operation will be allowed outside of the most restrictive zone and will be overseen by a representative of the ASC.

As part of the LMP, the ASC will identify potential funding sources to support a Land Steward who will implement LMP guidelines, act as a point person for recreation and commercial activities such as baiting/trapping applicants and fir tipping, coordinate and manage forestry activities within the Corridors, and act as a liaison to the LMP advisory group and other stakeholders. In the event that the ASC acquires additional land(s) in the future, it is expected that the Steward's responsibilities would expand to manage all ASC-owned lands. To ensure that this remains a living document, the LMP also establishes an Advisory Group that will meet periodically to review the plan objectives and accomplishments, and make recommendations for revisions to the ASC.

The ASC believes that implementation of the LMP will enhance protection of Atlantic salmon habitat in the Dennys River watershed.



**MAINE ATLANTIC SALMON COMMISSION  
AUGUSTA, MAINE**

**DENNYS RIVER CORRIDOR LAND MANAGEMENT PLAN**

**1.0 INTRODUCTION**

Populations of wild Atlantic salmon (*Salmo salar*) have exhibited a declining trend throughout most of their geographic range in North America since the mid-1980s (Maine Atlantic Salmon Task Force, 1997). Maine is the only state in the United States containing native wild Atlantic salmon populations (US Fish & Wildlife Service (USFWS) and National Oceanographic and Atmospheric Administration Fisheries (NOAA), 2000). Within the State of Maine, there are only eight rivers where distinct populations of wild Atlantic salmon are known to be naturally reproducing: Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, Sheepscot, and Cove Brook. In 1999, the USFWS and NOAA concluded that wild stocks of Atlantic salmon were close to extinction in these eight Maine rivers (USFWS and NOAA, 2000). To protect wild Atlantic salmon in the Gulf of Maine, federal agencies listed them as endangered in the eight rivers in November 2000.<sup>1</sup>

To protect wild Atlantic salmon from extinction in the Gulf of Maine, the Endangered Species Act (ESA) listing requires federal agencies to develop a Recovery Plan to restore salmon populations to healthy levels. This includes a requirement that all federal agencies consult with the USFWS and NOAA Fisheries to ensure any action authorized, funded, or carried out by any federal agency is not likely to jeopardize the continued existence of the listed salmon. The listing requires that Atlantic salmon not be disturbed in the rivers listed above.<sup>2</sup>

The Maine Atlantic Salmon Commission (ASC) is the state agency charged with restoration and management of Atlantic salmon throughout its historical range in Maine. Since

---

<sup>1</sup> The Endangered Species Act (ESA) of 1973 defines an endangered species as one “in danger of extinction throughout all or a significant portion of its range”.

<sup>2</sup> As an endangered species, it is a federal violation to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect wild salmon in the eight Maine rivers. Actions that compromise salmon habitat may also be considered as a “taking”.

inception of the State Conservation Plan in 1997, the ASC has conducted assessment research projects on the eight Maine rivers designed to increase the understanding of Atlantic salmon and their habitat. The ASC manages the State of Maine's Atlantic Salmon Conservation Plan (Maine Atlantic Salmon Task Force, 1997) and is also working with federal agencies on the Federal Recovery Plan for Maine's Atlantic salmon. According to the federal agencies, the Conservation Plan will form the nucleus of the ESA Recovery Plan, and addresses a variety of issues, including habitat protection and enhancement in the salmon watersheds, fisheries management and fish health, marine and estuarine survival, aquaculture, and other issues.

### 1.1 Land Management Plan Background and Purpose

The ASC acquired 4707 acres of land along the Dennys River and Cathance Stream in eastern Washington County as part of the implementation of the Maine Atlantic Salmon Conservation Plan. These lands are the subject of this Land Management Plan (LMP). The majority of the acquired land (3649 acres) was purchased from International Paper in 2002. In addition, the project area includes two parcels of land, totaling 1,058 acres, given to ASC by The Nature Conservancy (TNC) located in the towns of Meddybemps and Cooper. The 4707 acres of land consists of 14 discontinuous parcels, primarily along 15.6 miles of the Dennys River and 8.4 miles of Cathance Stream. The width of the Corridor is approximately 1,000 to 3,000 ft on either side of the Dennys/Cathance, but is narrower in some places and wider in others, and in many places only includes a single side of the river (Appendix A, Figure 1).

This LMP is designed to provide effective and practical strategies for long-term management of ASC lands. The LMP will be utilized by future steward(s), regulators, contractors, agencies, and other groups to guide land management decisions and is expected to evolve and change as management practices and issues change both within the watershed and within the ASC lands along the Cathance Stream and Dennys River corridors (Corridors).

While the LMP has been developed specifically for the ASC properties, it is anticipated that it will provide useful and relevant recommendations that may be

incorporated into other land management plans within the watershed as well as a model for the Machias River Corridor project.

## 1.2 Funding

The purchase of the Corridors was funded, in part, through the Land for Maine's Future (LMF) program and the National Fish and Wildlife Foundation. In determining whether a proposed acquisition can be funded, in full or in part, by the LMF Fund or the Public Access to Maine Waters Fund, the LMF board considers whether the site is of state significance and: "Provides non-motorized or motorized public access to recreation opportunities or those natural resources identified in [the Corridors]." The LMF criteria for acquisition state that: "When acquiring land or interest in land, the board shall examine public vehicular access rights to the land and, whenever possible and appropriate, acquire guaranteed public vehicular access as part of the acquisition"<sup>3</sup>. However, the LMF Guidelines also state that: "Public access is a core purpose of the Land for Maine's Future Program. All lands acquired through the LMF are open to the public. Exceptions may include places where species management takes precedence or public safety may be at risk."<sup>4</sup> In light of the fact that the Corridors were purchased specifically for the conservation of Atlantic salmon habitat, the ASC reserves the right to place some restrictions on access to the parcels.

## 1.3 Land Management Plan Goals and Objectives

This LMP focuses on proposed actions for enhanced protection of Atlantic salmon habitat, as outlined in the Atlantic Salmon Conservation Plan. Where consistent with this primary goal, the ASC also intends to provide continued traditional recreational access to these lands for uses such as trapping, fishing, hunting, canoeing, and other low-impact land uses as well as limited forestry and fir tipping.

The ultimate goal for the LMP is to protect Atlantic salmon habitat areas from degradation such as nonpoint source pollution, deforestation of riparian buffer zones and

---

<sup>3</sup> Chapter 353, Title 5 §6207, Acquisition Criteria, [1995, c. 462, Pt. D, §1 (amd).]

embedddness caused by sedimentation. The strength of addressing protection of habitat areas on a corridor basis, such as the Dennys and Cathance, is protection is provided not only for the primary, mapped and identified salmon habitat, but also for tributaries and upland portions of the watershed that contribute to the overall health of the ecosystem.

#### 1.4 Atlantic Salmon Habitat Protection

The LMP is designed to protect Atlantic salmon spawning and rearing areas, adult holding pools, and overall habitat by limiting potentially harmful land use practices. The LMP develops comprehensive land management practices that take a corridor-wide perspective on preventing sedimentation that can adversely affect habitat, protecting both primary and secondary habitats that provide protection of water quality and quantity. The LMP also establishes land use standards that minimize the impacts from recreational activities within the Corridors.

##### 1.4.1 Life History and Habitat Requirements

Forested riparian areas are an important aspect of Atlantic salmon habitat. Human disturbance that significantly alters riparian buffer areas adjacent to or upstream of salmon habitat within the contributing watershed of salmon can result in degradation of habitat. Since salmon lay their eggs in gravel nests (redds) in areas exposed to swiftly flowing waters (Stanley and Trial, 1993), any land use that results in sedimentation can fill-in gravel beds. This can reduce suitable breeding substrate and smother salmon eggs, as well as the many invertebrate species that inhabit the interstices between gravel and serve as important forage items for salmon. Increased turbidity associated with increased erosion and sedimentation can also injure the gills of salmon in all life stages and limit foraging success since this species hunts by sight.

Cool, well-oxygenated water (Stanley and Trial, 1993) maintained by canopy shading is another important aspect of salmon habitat, especially in late

---

<sup>4</sup> Land for Maine's Future Program Proposal Workbook, Maine State Planning Office, September 1, 2002

summer. Trees and coarse woody debris inputs to salmon streams help create and maintain habitat for invertebrate prey items. Such woody debris inputs also help to create pools and riffles by influencing flow patterns and provide diverse structural habitat important for salmon. Water quantity is important with respect to suitable breeding and rearing habitat. Water withdrawal for irrigation, fire fighting, and other consumptive uses in salmon habitat areas has the potential to adversely impact water quantity. Forested (as opposed to developed or highly managed) watersheds can help to smooth the annual hydrograph, attenuating peak flows, and maintaining base flows important for salmon habitat.

## **2.0     *GENERAL DESCRIPTION OF REGION AND CORRIDOR MANAGEMENT AREA***

### **2.1     Description of the Corridors**

The Dennys River is located in the eastern coastal river basin of Washington County, Maine and flows southeasterly for approximately 20 miles to Cobscook Bay on the Atlantic Ocean (Appendix A, Figure 1). The river drains an area of 132 square miles and originates at Meddybemps Lake in Washington County (ASC, 1982a). Sizable lakes in the watershed include Meddybemps Lake (6,765 acres), Pleasant Lake (339 acres), Cathance Lake (3,191 acres), Little Cathance Lake (140 acres) and Bearce Lake (200 acres). Bearce Lake flows into Meddybemps Lake.

The main stem of the Dennys River has been free of man-made obstructions from tidewater to the Meddybemps Dam since 1930, when the Dennysville dam was destroyed (Bartlett and Robinson, 1988). All other natural and artificial obstructions to fish passage in the watershed except two, are passable to migratory fishes. A 600-foot long rock wall at the north end of Meddybemps Lake prevents outflow and up migration to Stony Brook and, ultimately, to the St. Croix River. A natural falls below Pleasant Lake in Alexander prevents upstream migration on Sixteenth Stream (ASC, 1982a). Denil fishways are in operation on Cathance Stream, at Marion Falls, and on the Dennys River at the Meddybemps Lake outflow. The dam at the outlet of Cathance Lake and the dam at Great Works on Cathance Stream have steep pass fishways. As such, all of the habitat areas on the Dennys River are available to Atlantic salmon for migration, spawning, and rearing of juveniles.

### **2.2     Early History**

Originally settled in 1786, Dennysville and the surrounding area have supported ongoing forestry operations. The early European settlers viewed the rivers of the area as a source of power used to mill timber. Dams were built at several locations, including the head of tide at what is now called the Dam Pool, and other locations along the Dennys<sup>5</sup>.

---

<sup>5</sup> Salmon on the Dennys 1786-1988; Bartlett and Robinson, The Ellsworth American, 1988

Loggers often were sustained on the abundant trout and salmon that were present in the river. The area has been harvested at least five or six times, with little or no old growth forest remaining (Pennell, Personal Communication, 2003). In the early 1970's, St. Regis harvested the area for soft woods to supply their mill in Costigan, Maine. Champion International Paper purchased St. Regis in 1984 and continued medium to large scale timber operations within the watershed.

### 2.3 Recent History

A new trend in divestiture began in Washington County in the late 1990's. Large tracts of land were purchased by smaller timber companies that harvest as much or nearly as much marketable timber as allowed by law and then sell off the land (a process known as liquidation harvesting). The standard operating procedure for these smaller companies is to purchase larger tracts, construct access roads to harvest marketable timber, and then sell off the properties in smaller parcels for residential developments and house lots. This trend towards a temporary reduction of forest cover in the watershed may result in more even-aged forests in the coming decades as these heavily harvested forests regenerate.

### **3.0 INVENTORY OF EXISTING RESOURCES**

The following section provides a summary description of the Dennys River and Cathance Stream Corridors resources.

#### **3.1 Geologic and Soil Resources**

The Corridors are located in a gently rolling to moderately hilly (most slopes in the Corridors are 10% or less) part of Washington County (Appendix A, Figure 2), several miles west of the Oak Bay Fault which bisects the extreme eastern tip of Maine. Occasional moderate to small earthquakes are experienced in this region of Maine due to the presence of this fault. Whereas most of Maine is rising in elevation (post-glacial rebound) at this extreme eastern portion of Maine is slowly sinking, possibly as a result of the fault (Caldwell, 1998). Steep slopes (>10%) are the exception rather than the norm in the watershed and this helps minimize erosion related to exposed soils and forestry operations with inadequate Best Management Practices (BMPs).

The bedrock in the Corridors consists of mostly a plutonic igneous rock known as gabbro (the volcanic or non-intrusive equivalent of basalt), and other volcanic and igneous rocks that formed during the Sularian era. All of the rocks in the watershed are probably a result of the Acadian mountain-building event from the collision of North America with Avalon (ancient continent to the east) terrain (Caldwell, 1998).

Glacial deposits are by far the most abundant surficial materials in Washington County. A large proportion of the soils along the Dennys corridor are derived from fine-textured glacio-marine deposits (*i.e.*, marine clays) (Appendix A, Figure 2). Other soils immediately adjacent to the river are derived from recent alluvium, where there are floodplains. Glacial till is the dominant parent material in the higher elevations, away from the river. Areas of ice-contact glacial outwash deposits (such as eskers and kames) also occur in the corridor, although not to the degree seen in other parts of Washington County. These deposits typically consist of meltwater-sorted sands and gravels. Along the upper portion of the Cathance corridor, there are several extensive wetlands (Appendix A, Figure 3) where the parent material is organic matter (*i.e.*, primarily peat),



and glacial till predominates in areas of well-drained soils. The lower portion of Cathance Stream is similar to the surficial geology described for the Dennys corridor.

### 3.2 Topography

Topography of the Dennys River headwaters is characterized by hills and ridges largely forested by hardwoods and spruce-fir mixtures (ASC, 1982a) (Appendix A, Figure 4). Drum and kettle topography produced by the melting ice and debris of the last glacier is common in the lower portions of the drainage. Lowland wetlands and bogs border some sections of the both the lower and upper drainage. Moderate and gentle slopes (<10%) predominate.

### 3.3 Water Quality

Maine has had a water classification system since the 1950's (Maine DEP, 2001). This classification system establishes water quality goals for the State and is used to direct the State in the management of its surface waters, protect the quality of those waters for their intended management purposes, and where standards are not achieved, direct the State to enhance the quality to achieve those purposes. The classification standards establish designated uses, related characteristics of those uses, and criteria necessary to protect the uses, and establish specific conditions for certain activities such as the discharge of wastewater.

The State currently has four classes for freshwater rivers. All attain the minimum fishable-swimmable standards established in the federal Clean Water Act. (Maine DEP, 2001). Along the Dennys River, from the outlet of Meddybemps Lake to the Route 1 bridge, the water quality classification is at the highest possible, Class AA. All tributaries of the watershed, including Cathance Stream, are the second highest possible, Class A (Maine DEP, 2001).. Once a classification assignment is made, and the uses and criteria are achieved, that goal is protected by the antidegradation provisions of the water quality statute (Section 464(4)(F)). Thus, the law provides a mechanism for the State to continually move forward in the improvement and protection of water quality. Downgrades to classification have been infrequent and are limited to situations where

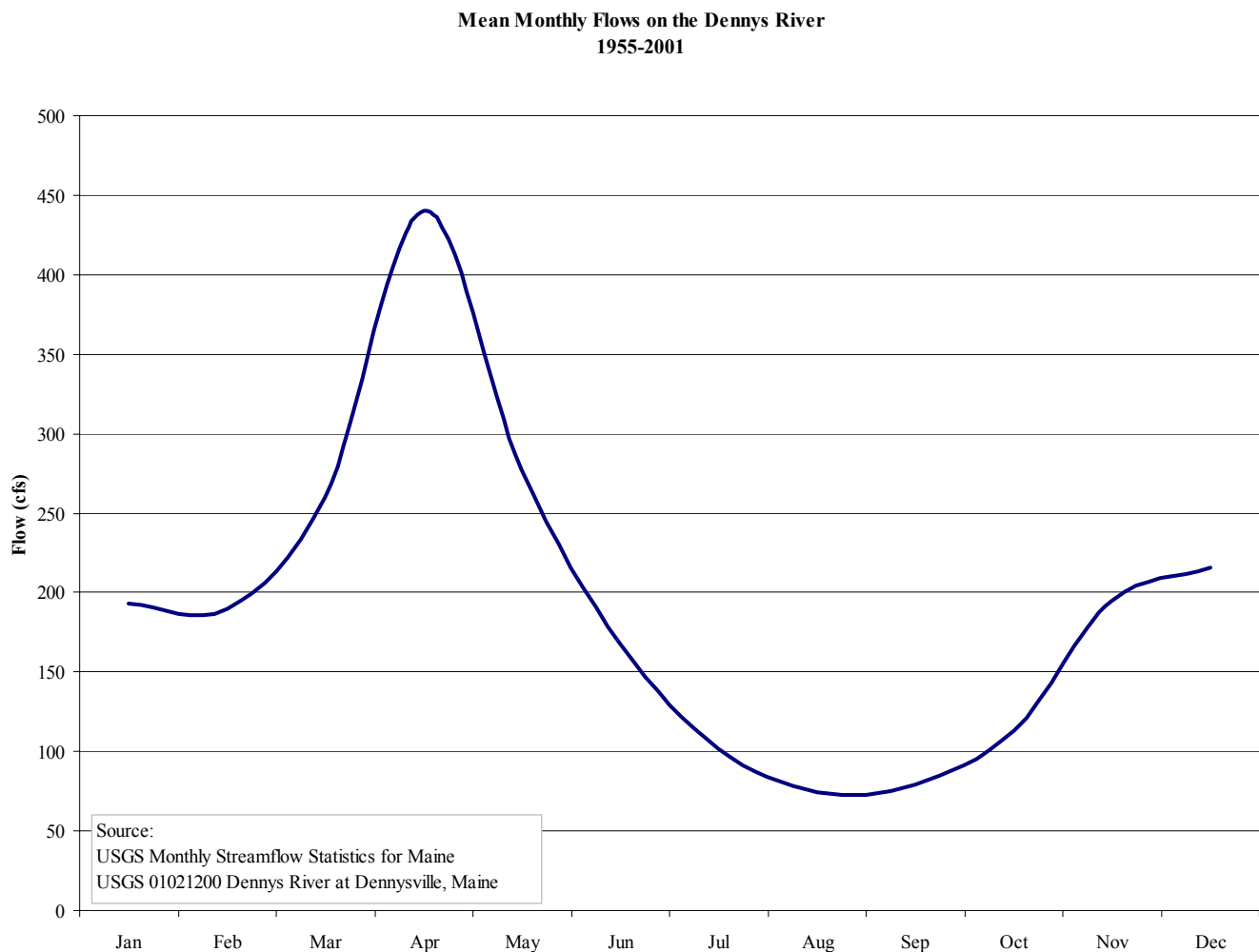
existing conditions do not afford the possibility to achieve the higher class. The LMP does not support any actions that would result in a downgrade of the current designations.

Since the Corridors are free-flowing (without obstruction) and are not heavily developed, the biggest water quality concerns are forestry and agricultural operations with inadequate buffer zones or BMPs, All Terrain Vehicle (ATV) trails or gravel road erosion. Although not presently a major issue, development that occurs too close to the salmon habitat along the Corridors is a potential water quality threat given the recent liquidation harvesting operations in the watershed. Protective regulations on salmonid spawning habitat are enforced by the Maine Department of Environmental Protection.

### 3.4 Flows

Precipitation in the drainage can be expected to fall within the range of 45 inches inland to 50 inches coastal annually (personal communication, Mark Turner, National Weather Service, Caribou, Maine, June 13, 2003). Tributaries and springs may contribute as little as 10 cubic feet per second (cfs) to the main-stem river below Meddybemps Lake during low flow times of the year (Atlantic Sea Run Salmon Commission, 1982). The Dennys River watershed between the outlet and the USGS gauging station at Dennysville is 92.9 square miles ([www.usgs.gov](http://www.usgs.gov), 2000). The range of monthly mean flow of the river at the gage is 75 cfs in August to 440 cfs in April over the past 50 years (Figure 1).

Figure 1. Mean Monthly Flows in the Dennys River from 1955-2001 From the USGS Gaging Station. NOTE: Managed flow via Meddybemps Dam.



### 3.5 Aquatic Resources

The Maine Department of Marine Resources manages an anadromous alewife run in the Dennys River. Alewives ascend the entire Dennys River mainstem in late spring and use a fish ladder to gain access to Meddybemps Lake. Young of year (YOY) alewives exit Meddybemps Lake in late summer through fall and descend to tidewater.

The Maine Department of Inland Fisheries and Wildlife (IFW) manages Meddybemps Lake for landlocked Atlantic salmon and smallmouth bass. Meddybemps Lake is recognized as an exceptional smallmouth bass fishery in the presence of

anadromous alewives. Landlocked salmon are annually stocked in Meddybemps Lake. Although some natural reproduction might occur in the Meddybemps Riffles, IFW does not manage for natural reproduction of landlocked salmon in the lake and views the lake as a stocked population. Other freshwater fish species found in the Dennys River basin include brook trout, redbreast sunfish, pumpkinseed, brown bullhead, yellow perch, chain pickerel, white sucker, and various minnow species.

Hatchery raised Atlantic salmon have been stocked in the Dennys River drainage since 1875. In 1992, ASC began stocking the Dennys River with river-specific Atlantic salmon raised at the Craig Brook National Fish Hatchery (Maine Atlantic Salmon Task Force, 1997). The hatchery-raised Atlantic salmon are progeny of wild salmon collected in the Dennys River. These progeny are then stocked in the Dennys River as fry, parr, and smolts.

Based upon reported rod catch data and smolt production estimates, the Dennys River supported a historical (*i.e.*, pre-1980's) run size of 150-450 adult Atlantic salmon (ASC, 1982a). Commencing in the mid 1980s, a precipitous decline in the number of returning adult Atlantic salmon has been documented throughout all Maine rivers including the Dennys.

Suitable spawning and rearing habitats in the watershed as mapped by NOAA and FWS are shown on Appendix A, Figure 5. The criteria for suitable habitat includes parameters such as flow, substrate-type, temperature and depth. Critical spawning and rearing habitat areas have a generally wider coverage area and are expected to be identified in the future by NOAA and FWS as a product of the ESA Recovery Plan and are defined as:

*Specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery (USFWS, 2002).*

Salmon habitat areas are erratically distributed below Cathance Lake, except for the deadwater areas and are primarily distributed along the mainstem below what is known as Gilman Dam with a relatively small area at Meddybemps Riffles.

### 3.6 Terrestrial Resources

Vegetation in well-drained areas is predominantly softwood-dominated (*e.g.*, spruce and fir, with some areas of white pine, northern white cedar and hemlock) (Appendix A, Figure 4). Some mixed hardwood forests occur in well-drained upland areas as well. In these areas species such as sugar maple, red maple, trembling aspen, white and yellow birch, white ash, red oak, and beech are mixed with occasional softwoods. Typical herbs include bunchberry, Canada mayflowers, wild sarsaparilla and shinleaf pyrola. The forested areas within the Corridors are predominantly young growth (*i.e.*, stands less than 30 years old). Blueberry barrens occur in areas of well-drained soils throughout the watershed, however there are no barrens within the Corridors.

Poorly-drained areas within the Corridors are dominated by heaths (*i.e.*, Ericads such as cranberries, leatherleaf, bog rosemary and Labrador tea) in bog-type wetlands (Johnson, 1985). Other wetland species such as alder, wild raisin and winterberry dominate scrub-shrub cover types in areas of hydric mineral soil. Woodland swamps and hardwood floodplains are dominated by red maple, silver maple, green ash, northern white cedar, American elm and herbs such as ostrich fern, cinnamon fern and purple avens.

### 3.7 Threatened and Endangered Species

The endangered Atlantic salmon (*Salmo salar*) is the primary rare, threatened and endangered species within the Corridors. However, the state-threatened Pigmy snaketail (*Ophiogomphus howei*), a dragonfly species, is known by IFW to occupy nearby lands outside the project area. This species occupies fast waters (brooks, streams, or rivers

with rapids), and is known in Washington County. As such, this species could potentially occur in or adjacent to the project area.

### 3.8 Exemplary Natural Communities/Significant Habitats

An outstanding Streamshore Ecosystem (a type of open herbaceous wetland) has been identified by Maine Natural Areas Program (MNAP) within part of the former Nature Conservancy lands along the Dennys River in the Town of Cooper (Appendix A, Figure 5). Smaller areas of this ecosystem type are located in the extreme southern portion of Meddybemps along the Dennys River. This exemplary natural community is a non-forested streamshore ecosystem directly influenced by stream hydrology but with persistent palustrine (not riverine) vegetation. The streamshore community is ranked by MNAP as S-4 (apparently secure in Maine).

One mapped deer wintering area occurs in the Corridors, in the Town of Cooper (Appendix A, Figure 5). This area has been identified by IFW as a moderate quality deer wintering area. Deer wintering areas are especially important in Washington County where winter snows can be deep and winter habitat can limit populations.

### 3.9 Land Use

The Dennys River watershed is sparsely populated with a population density between 0 to 150 people per square mile. The small towns of Dennysville, Meddybemps, Cooper, Charlotte, Marion TWP, Alexander, Edmunds TWP, and Baring Plantation are located within the Dennys watershed and have a combined population of about 1,800 (Maine Census, 2000). About 85% of the Corridors is forest, 15% is wetlands and there are no permanent or seasonal residences located within the Corridors. As such, the recreational and commercial demands within the Corridors are relatively low.

### 3.10 Timber and Forestry Operations

Forestry has been and is the dominant land use in the Dennys River watershed. The forest resources are managed primarily for the harvesting and production of pulp for

paper manufacturing and other wood products. The soils within the corridors are generally productive for growing softwood, most of which, within the Corridors, are balsam fir and red spruce with northern white cedar, white pine, hemlock, white spruce and black spruce occurring as well. Hardwood species include birches, maples, beech, ash, aspen (popple), red oak, black cherry, scattered striped maple and other northern hardwoods. Because of the aggressive harvesting within the watershed and the Corridors, the forests generally represent third generation, varied-age growth. The flush of new growth going through an early successional species mixture of raspberries, blackberries, poplar, grey birch, pin cherry, striped maple, etc. follows aggressive harvesting and can be found in the habitat mosaic of the watershed.

A large network of roads were built to harvest budworm-affected and over-mature forests, as well as to provide forest fire protection access from 1977 - 1992. After the spruce and fir stands fell out of the canopy, a flush of early successional growth occurred. This pulse of early successional (fire species) growth has since matured in these areas. This regenerating forest is presently full of dense spruce and fir stands at the sapling size of fifteen to twenty feet in height. Natural thinning will take place as the many stems compete for sunlight, water, and occupation of space. This natural progression will continue and provide cover for wildlife and keep the ground water and small tributary streams cool for the streams and rivers.

Recently harvested areas are concentrated in the No. 14 Township, such as along the west bank of the Dennys River in the northeast portion of No. 14 Township (Appendix A, Figure 4). Importantly, however, the Corridors contain a mixture of age classes, species and forest stand types (*i.e.*, they are not dominated by bicultures of spruce-fir in even-aged stands). Mixed northern hardwood stands are common on hills and slopes away from the immediate riparian areas. In addition, the varied topography includes forested wetlands and floodplains that include species like northern white cedar and red maple. As such, it is not anticipated that massive outbreaks of spruce budworm or other forest pests or disease would result in large-scale dieback that could impact salmon habitat by providing a pulse of woody debris to streams (beyond natural rates) or allowing for erosion or streambank instability.

There is a potential for aggressive harvesting and land subdivision for residential purposes occurring adjacent to the Corridor properties and throughout the watershed.

### 3.11 Agriculture

Wild blueberry culture is the primary form of agriculture in the Dennys River watershed, although no commercial blueberry operations occur within the Corridors (Appendix A, Figure 4). Other types of agricultural activities and/or products in the watershed include: haying, minor horse, beef cattle and sheep farming, Christmas tree cultivation, growth of market vegetables, cranberries, blueberries, as well as landscape and horticultural plants. These agricultural activities do not currently rely on irrigation withdrawals from the Dennys River or Cathance Stream.

### 3.12 Recreation

The Corridors have historically supported a variety of recreational and outdoor activities. One existing ATV trail passes through the ASC lands. This trail is a gravel road that comes within several-hundred feet of the west bank of the Dennys River and includes a culvert crossing over a major tributary (Curry Brook). Snowmobilers utilize this and other existing roadways within the Corridors during the winter months.

Anecdotal evidence indicates the area is used for a variety of types of hunting, including deer, bear, and game birds. Trapping of fox, coyote, muskrat, beaver and bobcats currently does occur within the corridor, but on a limited basis. The Dennys River was once renowned for its sports fishery and still supports fishing with the exception of the taking of Atlantic salmon.

Currently, three primitive campsites exist within the Corridors and are located at the outlet of Gilman Brook, Curry Landing and Little Falls. Anecdotal evidence suggests that approximately 100 people per year undertake overnight canoe trips, and that some boaters utilize these campsites (Public Meeting, Meddybemps, November 2002). There is limited cross-country skiing near Gilman Dam. It is unknown if mountain biking occurs within Corridors.



### 3.13 Cultural Resources

Based on archaeological investigations within the Dennys watershed, it has been determined that Native American people first visited the area sometime during the Middle Archaic Period, ca. 5500-4000 B.C. The Passamaquoddy consider Meddybemps Lake, which means “Plenty of Fish” (Maine Census, 2000) and the Corridors a central place or hub, which provided travel routes connecting coastal areas to the St. Croix River drainage and other interior settings. However, no known archaeologically sensitive/significant sites exist within the Corridors (State Historic Preservation Officer, 2002). The Maine State Historic Preservation Officer (SHPO) has indicated that there is a potential for such sites within the Corridors, and that future survey in these areas may identify sensitive archaeological sites that, if found, will be incorporated into the ASC mapping database.

### 3.14 Watershed Development & Stresses

This LMP will be applied toward reducing land use stresses that could impact water quality and salmon habitat within the Corridors while maintaining low-impact traditional land uses. Potential water quality and habitat issues in the watershed include erosion and sedimentation from ATV trails, logging roads, bridges, ditches, and road crossings, faulty septic systems, poorly managed development near lakes and streams (*e.g.*, inadequate buffers), agricultural pesticide contamination, PCB contamination, poorly maintained sand/salt facilities, forest harvesting and water withdrawal or reduced water flow. Approximately 35% of the watershed has been surveyed, with 20 nonpoint source (NPS) sites documented and an additional 150 undocumented sites estimated on the main stem of the river and around the lakes (Sheafe, 2000). This is a result of land uses such as deteriorating or undersized stream crossing structures and road development, ATV use and logging. Lastly, there are several NPS projects being launched concurrently in the watershed involving many municipal, state, federal, and nonprofit agencies.

The watershed is beginning to face potential issues related to the divestiture of large tracts of forestry land. Some large parcels are being aggressively cut, and new access roads and stream crossings are being built. After most saleable timber is removed from these properties, they could be subdivided and then put on the market. This new trend has the potential to dramatically affect the watershed ecosystem through fragmentation of wildlife habitat, destruction of wetland and vernal pool systems, and potential degradation of water quality as addressed above.

Another Atlantic salmon habitat issue is the rapid growth of the beaver population. Once trapped for their pelts, beaver populations had been held at a relatively low level in the watershed. In addition at least one major beaver predator, the wolf, has been eliminated from the watershed. With stronger regulations regarding trapping and lack of demand for fur in general, the watershed has experienced a beaver population explosion. As the beaver population has increased over the past 15 years, there are indications that the quality of wild brook trout and Atlantic salmon habitat may have been affected. Before the decrease in demand for beaver pelts, most streams were characterized by relatively few beaver dams, generally cooler and more free-flowing water, relatively productive brook trout spawning and nursery areas, and robust riparian zones. Many streams are now characterized by numerous beaver dams contributing to warmer water, degraded brook trout spawning/nursery areas, and altered riparian zones (e.g., beaver ponds increase direct sun to the streams). There is a potential that this “overpopulation” of beavers may lead to impacts to critical Atlantic salmon habitat. There are relatively few data, however, to support a relationship between beaver populations and salmonid populations.

Beaver are present and pose potential problems to brook trout and Atlantic salmon habitat and riparian zone habitat on most Dennys River tributaries. Activity is more common on tributaries than on the mainstem or Cathance Stream. However, the presence of numerous beaver dams on the tributaries may be a factor in diminished quality of juvenile salmon habitat on the mainstem and tributaries through increased water temperature, sediment loading and reduced migratory access. One theory is that area wild brook trout fisheries in countless Downeast streams have suffered serious declines because of diminished habitat caused by beaver depredations (personal communication,

Ron Brokaw, Fisheries Biologist, Maine Department of Inland Fisheries & Wildlife, Machias, Maine, March 7, 2003). Studies are currently underway by the University of Maine at Machias to better understand the effects that beaver have on the watershed.

Finally, pH has been identified as a potential stress on salmon populations in Maine and Atlantic Canada over the last half-century as a result of long range acid transport originating from the Ohio Valley and other upwind sources. A workshop and forum entitled, “Status and Trends of Water Chemistry in Maine Atlantic Salmon Watersheds” held during March, 2003 in Orono, Maine included several papers from researchers interested in the effects of pH-related water chemistry as a threat to salmon populations (SHARE Research and Management Committee, 2003). Forum participants, including ASC, agreed that:

- It is time to investigate the possibility of a pilot liming study on one of the Downeast salmon rivers including, potentially, the Dennys, and
- The study should be multi-agency.

## **4.0     *MANAGEMENT GUIDELINES***

Management guidelines developed within this LMP focus on protection of water quality and quantity through protection of resources immediately adjacent as well as hydraulically linked to the Dennys River, Cathance Stream and their tributaries. These guidelines apply a varying degree of control over activities occurring within the Corridors based on their potential to impact the waters (*e.g.*, proximity to salmon habitat or potential for erosion/sedimentation).

### **4.1     Determination of Resource Management Zones**

In an effort to identify and define specific resources zones within the Corridors, ASC analyzed salmon habitat protection requirements, existing environmental resources, land use patterns, and regional land use priorities. By taking the known environmental resources and analyzing them in relation to the identified land use activities which may occur within the Corridors, ASC, in consultation with State, Federal and local entities has established Resource Zones that will:

- protect important spawning and rearing Atlantic salmon habitat
- control nonpoint source pollution
- maintain windfirm riparian buffers to minimize changes in stream temperatures, enhance stream bank habitat, and minimize soil erosion
- limit pesticide use in sensitive areas
- allow for most traditional uses of the Corridors

The Resource zoning process identified some areas within the Corridors that may not be suitable for certain activities due to the presence of unique, sensitive or protected resources. The process developed management guidelines that follow and, in many instances, exceed Maine State rules for such activities as forestry operations, road construction/maintenance, and wetland encroachments.

Forested buffers established by the LMP, in addition to protecting salmon habitat, will provide several important non-target functions. Wildlife corridors and forest interior habitat created by such buffers will benefit a whole suite of species with large home

range requirements (*e.g.*, bear, bobcat, fisher), interior forest habitat requirements (*e.g.*, wood thrush), or sensitivity to human activity (*e.g.*, bald eagle). In addition to maintaining the ecological integrity of the corridor, the forested riparian buffer zones will also ensure that several recreational and aesthetic amenities (*e.g.*, hunting, hiking, undeveloped/forested viewsheds) are preserved in perpetuity.

#### 4.2 Purpose of Resource Management Zones

The purpose of establishing these Resource Management Zones (RMZs) is to identify what activities and uses are most appropriate for specific areas within the Corridors. These RMZs serve as a reference point for the ASC to effectively manage the corridors and identify allowed uses for the public, while establishing a living document dedicated to the protection of Salmon habitat.

RMZs were developed to protect salmon habitat and other resources sensitive to potential land uses within the Corridors while allowing for continued use of the Corridors for transitional traditional activities. Each RMZ has been determined based upon a review of existing resources, how traditional land uses such as forestry could impact the functions and integrity of these resources, and existing access needs of the general public.

#### 4.3 Resource Management Zone Definitions

The RMZs, from most to least protective are:

- 1) Habitat Protection Zone,
- 2) Limited Use Zone and
- 3) General Use Zone.

Section 4.6 outlines allowable uses for each zone.

Intact forested riparian buffer zones which protect water quality and salmon habitat are an important component of optimal Atlantic salmon habitat and an essential part of the LMP. The stakeholders at the two November 2002 public meetings held to discuss the objective of the LMP, overwhelmingly felt that the Corridor lands should be

left largely as they are (*i.e.*, forested and undeveloped). This, combined with the fact that the primary objective of this LMP is to protect Atlantic salmon habitat, suggests that conserving riparian buffer zones should be a primary component of the LMP. Forested buffers perform several functions directly related to salmon habitat quality (Spence *et al.*, 1996; Haberstock *et al.*, 2000):

*Water quality protection.* Buffers filter sediment and pollutants from upslope areas and stabilize stream banks.

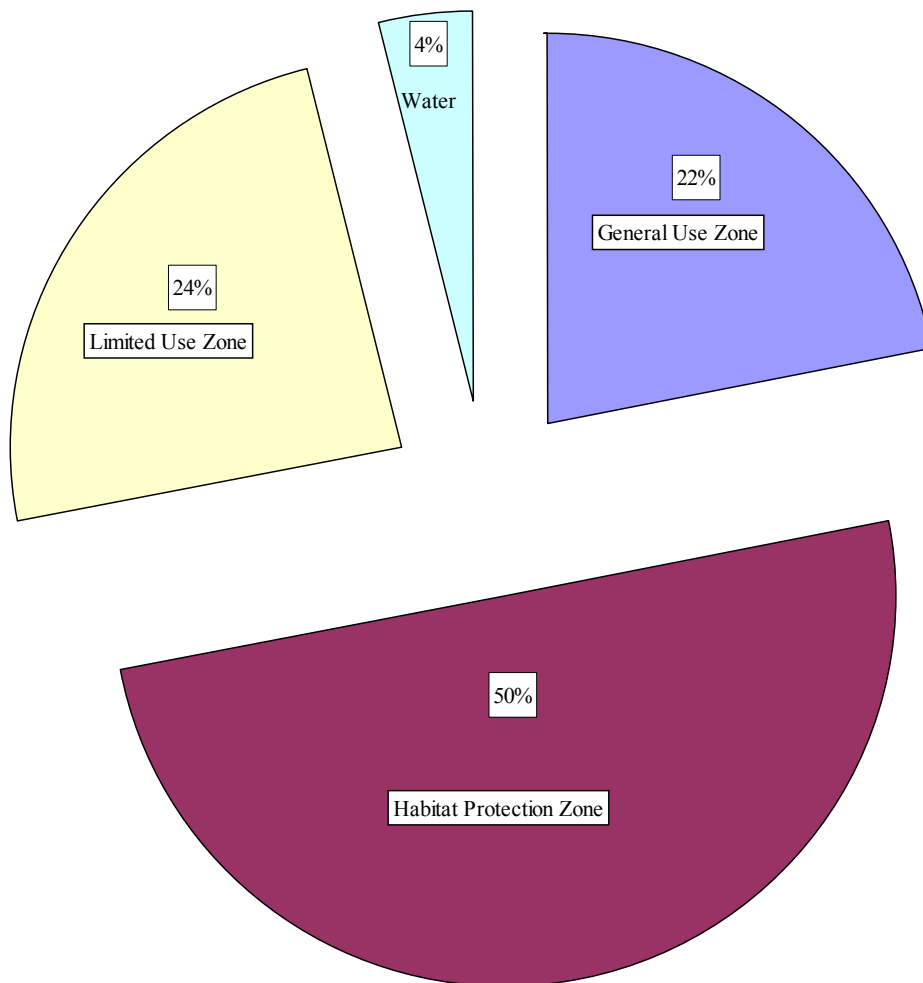
*Shading and temperature regulation.* Canopy cover helps maintain cool temperatures during late summer.

*Regulation of streamflows.* Buffers typically include variable water source areas that attenuate peak flows and maintain base flows through the storage and slow release of runoff.

*Coarse woody debris and other organic matter inputs.* Forested buffers provide wood inputs that are important for salmon habitat structure/cover. Litter inputs are also an important energy source for the detritus-based community of aquatic macro-invertebrates and form the basis of the entire aquatic food chain.

The total amount of area within each of the RMZ is illustrated on Figure 2.

Figure 2. Percentage of Resource Management Zones by Type within the Corridors



#### 4.3.1 Habitat Protection Zone

The Habitat Protection Zone (HPZ) is a no-cut/no disturbance zone shown in red in Appendix A, Figure 7. HPZs were developed and mapped (Appendix A, Figure 7) based on the long term protection of identified habitat for salmon, wetlands (Appendix A, Figure 3), waterways and waterbodies (Appendix A, Figure 1) that have a direct or indirect impact on water quality or salmon habitat (Appendix A, Figure 5), and/or areas possessing unique or fragile environmental resources (Appendix A, Figure 5) and steep slopes (Appendix A, Figure 2). In some cases, such as mainstem river sections, perennial tributary streams and

wetlands, the HPZ was expanded beyond the limits of these resources by up to 250 ft to provide buffers from potential water quality impacts from forestry or other land uses (See Section 5.3). Areas and habitats that warrant the protection afforded by the HPZ include:

- Sensitive waterways and waterbodies within the corridor include:

All perennial mainstem rivers and tributary (*i.e.*, to the Dennys and Cathance) streams within the Corridors are included within the HPZ. Perennial tributaries that bisect the ASC lands, include, but are not limited to: Gilman Brook, Curry Brook, Preston Brook and Venture Brook. These areas are essential to the protection of salmon habitat and therefore are the most restrictive. Small tributary streams can provide a conduit for sediments and other pollutants to bypass forested riparian buffer zones without sufficient treatment and small streams themselves are often more sensitive to water quality impacts than large streams, which are better able to dilute impacts (Davies, 1997; Haberstock *et al.*, 2000).

- Wetlands

Wetlands were included in the HPZ because impacts to wetlands in the Corridors and contributing watershed can have negative effects on salmon. Riparian wetlands are typically connected by surface and/or subsurface hydrology to streams, and perform important water quality functions (Spence *et al.*, 1996). Wetlands typically have water tables within the root zone and are more effective than uplands, for example, at converting potentially available nitrogen to a gaseous form through denitrification. Wetlands are often effective in trapping sediments and phosphorous and other sediment-bound pollutants. Disturbance to wetland soils may compromise wetland functions.

Wetland preservation in the Corridors enhances buffer function. Any surface water connecting the wetland and the salmon stream (*e.g.*,



wetland has intermittent stream outlet) increases the potential risk of sedimentation related to inadequate buffer width or wetland protection. Forested wetlands adjacent to streams provide important functions such as shading, wood debris, and litter inputs that are not provided by open-canopy wetlands to the same degree. Placing wetlands within the HPZ will ensure that these functions and values will be maintained and protected.

All wetlands are included in the HPZ to protect water quality and quantity functions (Haberstock *et al.*, 2000). Isolated wetlands are considered HPZs within their boundaries, and wetlands along the mainstem stream reaches are protected by 250 ft HPZ buffers.

- Steep Slopes

All slopes greater than 10% were included in the HPZ. Steep slopes are directly correlated with erosion and sedimentation potential. Any timber removal or road building in these steep slope zones would risk sedimentation impacts to Corridor's waters. Allowing such impacts would not be consistent with the LMP goals and so they were placed in the HPZ.

- Deer Wintering Areas

A single deer wintering area, located in Cooper exists within the Corridors. In light of the fact that it is an important wintering area for the watershed and to promote deer habitat, Deer Wintering Areas are included in the HPZ. Although deer wintering habitat is not directly related to the quality of salmon habitat, protecting important deer habitat is consistent with the more wide-ranging recreational and ecological goals that the ASC has for the Corridors.

- Rare Threatened or Endangered Species Habitat and Exemplary Natural Communities

The endangered Atlantic salmon (*Salmo salar*) is the primary species to be considered within the Corridors. However, the state-threatened Pigmy snaketail (*Ophiogomphus howei*), a dragonfly species, is known by IFW to occupy nearby lands outside the project area. This species occupies fast waters (brooks, streams, or rivers with rapids), and is known in Washington County. As such, this species could potentially occur in or adjacent to the project area. All efforts to manage the subject lands to protect the overall ecological integrity of the Dennys and Cathance Rivers (*e.g.*, riparian buffer zone management, etc.) to protect Atlantic salmon habitat would be consistent with the protection of pigmy snaketail habitat as well. As the primary habitat for these species is associated with waterways, the 250 ft HPZ buffer will provide protection to these species and the obligate habitat.

An outstanding Streamshore Ecosystem (a type of open herbaceous wetland) has been identified by MNAP within part of the former Nature Conservancy lands along the Dennys River. Inclusion of these areas within the HPZ will afford protection to this ecosystem consistent with the ASC's other ecological goals for the corridor.

- Archaeological Resources

There are currently no known pre-historic archaeological sites, and no known historic buildings in the Corridors. As noted before, this is because no professional archaeological survey has been accomplished in the area. However, Native American artifacts have been recovered at the confluence of the Dennys River and Cathance Stream. These items can be found at the Dennysville Town Library. Archaeological surveys will be scheduled on the lands purchased with LMF funds. The SHPO anticipates that this will result in the location of multiple archaeological sites within

50m of the river/stream. As such, even if important sites are found, it is likely that they will be already protected by the 250 ft waterway buffer. The HPZ will be expanded to include any sites that are found outside the HPZ, consistent with the ASC's goals for other environmental resources in the corridors.

#### 4.3.2 Limited Use Zone

Areas that may require special consideration for use because of their proximity to Habitat Protection Zones (HPZ) or have the potential to possess unique or fragile environmental resources were designated as Limited Use Zones (LUZ), which are shown in yellow in Appendix A, Figure 7. As stated earlier, secondary impacts to water quality and salmon habitat often occur outside the direct or primary habitat areas. In most instances LUZs essentially provide a buffer to the HPZs and will ensure that there are limited impacts to secondary habitat within the Corridors. These areas may have some use restriction placed on them, but allow for a wider range of uses than the HPZs.

#### 4.3.3 General Use Zone

Areas that have few to no significant environmental resources, where a broad range of activities and uses are compatible with salmon habitat protection as long as proper BMPs are implemented and all Maine rules and regulations are followed. These areas are shown in green in Appendix A, Figure 7.

#### 4.4 Functions of Habitat Protection Zones

As shown in Table 1, some functions are provided primarily by the HPZ immediately adjacent to the watercourse (e.g., shading, woody debris inputs), whereas other functions are provided by a wider riparian zone or by the entire watershed (e.g., water quantity functions, sediment filtering). Since dense forest is required for shading and woody debris/organic matter inputs, maintaining the HPZ in a fully stocked (i.e., uncut) condition is important. Functions provided by the Limited Use Zones (LUZ) and

General Use Zones (GUZ) (e.g., infiltration of runoff, sediment filtering) can occur near optimal levels in a cut or partially cut condition provided proper BMPs are utilized and sensitive areas (e.g., steep slopes, wetlands, small streams) are avoided.

Table 1. Functions of HPZ, LUZ and GUZ

Function	HPZ (within 250 ft of stream)	LUZ & GUZ* (> 250 ft from stream)
Shading and Temperature Regulation	Primary	Does Not Provide Function
Large Woody Debris and Organic Matter Inputs	Primary	Does Not Provide Function
Water Quality Functions (other than shading)	Primary	Secondary
Water Quantity Functions	Secondary**	Primary**

\* An additional function of LUZs & GUZs is to provide wind-firm conditions in HPZs.  
 \*\* Baseflow maintenance is provided by the entire watershed, not primarily by the immediate riparian buffer. Flood storage during overbank flows is a primary function of riparian buffers. However, this plan includes floodplains as part of the resource to be buffered (the 250 ft buffer is measured from the edge of the floodplain wetlands not from the edge of the stream).

#### 4.5 Width of Resource Management Zones

The width of RMZs is related to the particular resource in the Geographic Information Systems (GIS) data layers comprising the HPZ. HPZ will be subject to the most restrictive zones in regard to allowable uses and forestry practices, with LUZ and GUZ subject to less restrictive to no conditions on allowable uses.

The prescribed buffer widths are, in most cases, more restrictive than those dictated by State regulations, and are sufficiently wide to be consistent with the Champion International Corporation Northeast Region Riparian Management Guidelines (Champion, 1997), and the Method to Determine Optimal Riparian Buffer Widths for Atlantic Salmon Habitat Protection (Kleinschmidt, 1999; Haberstock *et al.*, 2000).

The buffer zones incorporated into the Resource Management Zones (Appendix A, Figure 7) are as follows:

- The HPZ extends 250 ft back from the Dennys River and Cathance Stream in addition to all perennial tributaries. Further, the 250 ft is measured from the landward edge of all wetlands and floodplains adjacent to the streams (not from the edge of the stream itself, unless there are not streamside wetlands/floodplains).
- Isolated wetlands (away from the mainstems) designated as HPZ. In addition, a 100 ft LUZ buffer is placed around each isolated wetland.
- All steep slopes (greater than 10%) were placed in the HPZ, but with no additional buffer.
- Deer wintering areas and exemplary natural communities are within the HPZ but were not assigned additional buffers (by default, as they are near streams/wetlands, and are buffered their proximity to such).
- All areas between 250 ft and 1,000 ft from the mainstems (or adjacent wetlands if present) were placed in the LUZ to provide additional buffer protection and maintain windfirm conditions in the HPZ along the streams.
- Area greater than 1000 feet from the mainstem were designated as GUZ.

#### 4.6 Allowable Uses By Zone

A discussion of allowable uses within each RMZ is provided below. A summary of these is provided in Table 2 at the end of this section.

##### 4.6.1 Habitat Protection Zone Allowable Uses

As stated above, these areas have been identified as important to protect for salmon habitat and/or areas possessing unique or fragile environmental resources and therefore are the most restrictive with respect to allowable uses. All perennial tributary (*i.e.*, to the Dennys and Cathance) streams within the Corridors are included within the HPZ as are palustrine wetlands, deer wintering areas, exemplary natural communities and steep slopes. Perennial tributaries include, but are not limited to: Gilman Brook, Curry Brook, Preston Brook and Venture Brook. A general reference table (Table 1) is provided at the end of this section.

The HPZ is essentially a no-cut/no earth disturbance zone. This precludes the removal of any live or downed trees, but does not preclude the planting or seeding of areas, in the event that erosion or storm events threaten the integrity of the sensitive resources identified. The ASC shall have the option to allow tree harvesting in the HPZ, subject to state and federal regulations, for salmon habitat enhancement projects. For example, if a few mature trees had to be removed as part of a shoreline stabilization project (where mature trees threatened to tear away a portion of the bank), it might be considered desirable from a habitat perspective to remove the tree(s).

Limited vegetation management within the deer wintering area to improve habitat is permitted should another agency (*e.g.*, IFW) choose to pursue this; however, it is not the intention of the ASC to pursue management activities for species other than native sea-run Atlantic salmon. See Section 7.1 for a more detailed discussion of timber stand management objectives and exceptions.

No excavation or soil disturbance should occur within the HPZ. No new roads, trails or access will be provided within this Zone, unless the ASC determines that a specific area warrants new access (*e.g.*, water-dependent uses) and that the proposed work can be accomplished without adverse impacts to the identified resources at that location. ASC staff, with appropriate federal agency review and concurrence, will determine these exceptions.

Generally, access for low impact recreational activities such as hunting, fishing, primitive camping, etc., will be allowed with HPZs. However, if periodic review of the Corridors indicates a particular activity is adversely affecting sensitive resources, ASC reserves the right to restrict activities or modify access to such areas.

Water-dependant uses, such as canoe launches, would require limited tree removal in the 250 ft no-cut zone. This LMP does not recommend construction of any new access points at this time. However, if future revisions to the LMP were to call for a new access point to the river, (*e.g.*, in the case that existing access through private lands is no longer available) ASC will review appropriate sites and designs to ensure that no negative effects to the in-stream habitat or buffer functions are realized. Except for two locations (the Venture Brook Road at Curry Brook and the Dodge Road at Cathance Stream) no formal ATV or snowmobile trails are known to exist within the HPZ (See Section 4.4.2), and no future trails will be allowed.

#### 4.6.2 Limited Use Zone Allowable Uses

LUZs are areas that may require special consideration for use because of their proximity to HPZ or may possess unique or fragile characteristics themselves.

LUZs typically occur adjacent to HPZs, and extend either 100 ft or 750 ft back from the boundary of an HPZ. An overall 1,000 ft management zone (the first 250 ft in the HPZ and the next 750 ft in the LUZ) from both shores of the

Dennys River and Cathance Stream in addition to all perennial tributaries is established once both the HPZ and LUZ are considered. In some instances LUZs may occur independent of HPZs. In this LMP, however, the only LUZs are as additional buffers for resources designated as HPZ.

In the LUZ, limited tree removal may take place such that a minimum stocking level of 100 ft<sup>2</sup> basal area per acre must always be maintained, and a well-distributed, wind firm, and uneven-aged stand of trees is maintained at all times. However, the ASC will have the option to allow harvesting beyond these minimum stocking levels if circumstances or habitat improvement objectives dictate (*e.g.*, budworm damage salvage operations or stand management to enhance habitat). Where streamside floodplains or wetlands occur adjacent to the mainstems, LUZ buffer width measurements will begin at the landward side of these features, with LUZ extending 750 ft back from the edge of the HPZ (adjacent wetland or floodplain).

Other land disturbance, such as new trails, roads or any activity requiring forest clearing should be located outside of the 1,000 ft buffer, but will be reviewed on a case by case basis by the ASC. As with the HPZ, access for low impact recreational activities that pose little risk of sedimentation or other impacts to in-stream habitat, including hunting, fishing, primitive camping etc. may occur within LUZs. ATV and snowmobile trails will be limited to those already in place; new trails for motorized recreation will not be constructed without specific approval from the ASC. Only one existing formal ATV trail passes through the Corridors and within the 1,000 ft RMZ. This gravel trail is located along the west bank of the Dennys and includes a culvert crossing at Curry Brook and extends across Cathance Stream on the Dodge Road (See Section 5.1.1). No new trails will be allowed within this zone.

#### 4.6.3 General Use Zones Allowable Uses

GUZs are areas that have few-to-no sensitive environmental resources. They are areas in which a broad range of activities and uses will not impact



salmon habitat. They occur beyond the 1000 ft HPZ/LUZ buffer areas adjacent to the mainstem streams.

Beyond 1,000 ft (within the GUZ), the minimum 100 ft<sup>2</sup> basal area stocking rule for forestry operations will still be used where deemed appropriate by ASC.

Other land disturbance, such as new trails, roads or any activity requiring forest clearing will be allowed. As with the other zones, access for low impact recreational activities such as hunting, fishing, primitive camping etc. will also be allowed. No restrictions are placed on the use of GUZs for ATV or snowmobile access beyond the need to use BMPs as necessary to minimize erosion and sedimentation and the need to obtain all necessary state/federal permits for trail work.

#### 4.7 Resource Management Zone Variances

As acknowledged above, there may be instances where buffer zone requirements may be waived or modified. Some instances in which ASC will consider a variance to the requirements would include:

- Water dependent uses such as this installation of a hand carry boat launch.
- Removal of trees subject to diseases or pest infestation if, for example, a large pulse of woody debris/fallen trees threatens to create debris dams or negatively impact the stream (See Section 7.1).
- Research activities that require removal of canopy trees or stands within Resource Protection or Limited Use Zones.
- Emergency activities such as the creation of firebreaks.
- Other activities deemed necessary by the ASC.

Issuance of variances will be at the discretion of the Executive Director of the ASC, and will occur on a case-by-case basis.

Table 2. Allowable Uses Within the Resource Management Zones.

Activities	General Use Zone	Limited Use Zone	Habitat Protection Zone
<i>Forestry Operations</i>			
New Tote Roads	Allowed w/ ASC Review	Allowed on Limited Basis (Resource-Based Conditions w/ ASC Review)	Not Allowed
Revegetation & Planting	Allowed w/ ASC Coordination	Allowed w/ ASC Coordination	Allowed to Prevent Erosion, Reestablish Growth, or Enhance Habitat Only
Fir Tipping	Allowed w/ ASC Coordination	Allowed w/ ASC Coordination	Not Allowed
Pesticide Application	Not Allowed unless Special Circumstances & Approved by ASC	Not Allowed unless Special Circumstances & ASC Approval	Not Allowed
Timber Removal	Allowed: Maintenance of 100 ft <sup>2</sup> Encouraged; Cutting Plan Reviewed by ASC	Allowed: Must Maintain Minimum Stocking Level of 100 ft <sup>2</sup> Basal Area & Windfirm Uneven-Aged Multi-Species Stands	Not Allowed
<i>Earth Disturbance</i>			
Streambank Restoration	Not Applicable	Allowed w/ State & Federal Approval	Allowed in Extreme Cases of Erosion/Bank Destabilization w/ ASC, State & Federal Approval
New Boating Access	Not Applicable	Allowed w/ State & Federal Approval	Allowed w/ State & Federal Approval
New Roads & Trails	Allowed w/ ASC Review	Allowed on Case-by-Case Basis	Not Allowed except for Crossings or Water-Dependent Uses Consistent w/ Salmon Protection & ASC Approval
<i>Recreational &amp; General Access<sup>1</sup></i>			
Hunting	Allowed in Accordance w/ Maine Regulations		
Bear Bating & Trapping <sup>2</sup>	Allowed w/ Permission from ASC	Allowed w/ Permission from ASC	Allowed w/ Permission from ASC
Fishing <sup>3</sup>	Allowed in Accordance w/ Maine Regulations		
Hiking & Skiing	No Restrictions		
Camping	No Restrictions		Existing Primitive Sites Only
ATV & Snowmobiling	ATVs Allowed only on Established Trails; Snowmobiles Allowed w/o Restriction	ATVs Allowed only on Established Trails; Snowmobiles Allowed w/o Restriction	No ATVs - Snowmobiles Allowed only on Established Trails
<i>Other Activities</i>			
Habitat Restoration & Research	Allowed w/ Permission from ASC		

<sup>1</sup> All hunting and fishing activities require permits/licenses from the State of Maine.

<sup>2</sup> ASC will allow these activities on a trial basis for a period of two years.

<sup>3</sup>The taking of Atlantic salmon is prohibited in Maine.

## 5.0 PUBLIC ACCESS

Public access is consistent with the definitions of allowable use within the RMZs and, in most instances poses minimal threat to water quality and salmon habitat. As such, ASC intends to allow public access to the Corridors, with some restrictions as discussed in Table 2. It is important to note that public access does not necessarily mean vehicular access. The majority of the subject lands will be accessible on foot or nonmotorized access only. Permanent public access has been provided to the Dennys Corridor by way of Smith Ridge Road at the Dennysville/Charlotte town line and off Route 86 east of Venture Brook. These access points were selected for their location and are not currently developed to provide for vehicular traffic of any kind. Currently, these access points are forested and do not even include formal walking trails (Appendix A, Figure 1). According to state and federal laws, access for persons with disabilities is not required for a remote primitive recreation area in which no facilities will be maintained (*i.e.*, no special access requirements). No signage is proposed at any location on roadways or trailheads.

### 5.1 Current Access to the Corridors

Very few roads exist within the project boundary and many of them are impassable due to vegetative growth since the budworm harvest of the 1980s. Except for State Route 86, all of them are unpaved. One of the designated access points from Route 86, Venture Brook Road or 92-00-0 road, enters the Corridor at Curry Brook and then exits the area again (Appendix A, Figure 6). This road, connecting Route 86 with the Eastern Ridge road below the Cooper town line, is also a designated ATV trail maintained by the Breakneck Mountain ATV/Snowmobile Club. Only a few other roads cross into the project area but no more than 2,000 ft from the ASC property line.

No new access points and no major improvements to existing roads are currently planned. This is based on the goal of salmon conservation (reducing the amount of impact within the Corridors), and on the sentiment of the stakeholders present at the public meetings.

#### 5.1.1 Road Maintenance

It is difficult to develop a maintenance plan for these roads as they do not remain entirely within the project area; rather, weaving in and out of the project boundary (Appendix A, Figure 6). Even though vehicular right-of-way access is granted on Venture Brook Road as outlined in the acquisition, road maintenance outside the project is not guaranteed.

There are two locations where serviceable sections of roads within the corridor will need to be maintained by ASC. The first location is at Curry Brook (See Section 5.1.2) and the other is between the project boundaries across Cathance Stream on the Dodge Road or 93-00-0 road. This site includes a bridge that would need to be inspected periodically and be included in the project maintenance budget. These two sites will serve as BMP demonstration sites in hopes that neighboring landowners would adopt this practice on their own roads. Note that Dodge Road bisects a HPZ and should be monitored periodically as it provides access to Cathance Stream. Because it is an existing road, however, it should be maintained. Strict adherence to BMPs will be very important due to the close proximity of the stream.

#### 5.1.2 Gates

It is ASC's intent to install gates at both project boundary locations of Venture Brook Road at Curry Brook and at both project boundary locations on the Dodge Road (Appendix A, Figure 6). Gates will allow vehicular access to be closed off during the mud season when erosion and sedimentation risk is high. The time period from which the gates will be closed will be from March 15<sup>th</sup> to May 15<sup>th</sup> annually. In order to provide consistency among the access roads in the watersheds, this timing is consistent with International Paper's policy on temporary road closings.

## 5.2 Future Access

Much of the land adjacent to the Corridors has recently changed ownership and will continue to do so as larger timber properties are subdivided and divested. There is no guarantee that existing roads/trails will remain available for public use indefinitely. In the event that existing roads/trails that are used to access the corridors are posted, ASC is prepared to explore new access points, with a primary focus on the existing right of ways as previously discussed. Investigation and possible development of these existing rights of way will occur in the event that a municipality identifies such a need, or if ASC is notified that existing access provided by other landowners will be restricted.

## 5.3 Recreational Access

Access will be provided for most current and past recreational land uses. These uses must be consistent with Maine State Hunting and Trapping Rules and Regulations. In the event the activity requires state licensure or permitting, those undertaking such activities are responsible for obtaining such approvals. Activities that are consistent with Atlantic salmon habitat conservation and will be allowed include:

- Hunting

All ASC lands will remain accessible to the public for deer, small game, and bird hunting, subject to Maine laws and regulations.

- Bear Baiting & Trapping

No formal permit, other than a state license is required for hunting bear. Written permission from the landowner and hunter identification at the bait sites is required. It is not the intention of the ASC to commit personnel resources towards this activity. ASC is willing to grant permission for these activities, but will not establish an active management program (*i.e.*, permits for baiting). However, considering the current limited use of this area for bear baiting, ASC will process requests to place bait for two years. If, after two years, the ASC determines their workload precludes further review of

such requests, permission for baiting will no longer be granted. However, the ASC could grant permission to IFW the option to issue permits for this activity on ASC lands if the Department so wishes.

As with bear baiting, it is not the intention of the ASC to issue trapping permits, or to commit personnel resources towards this activity. ASC is willing to grant permission but, again, will not establish an active management program (*i.e.*, permits for trapping). However, IFW could be given the option to issue permits for this activity on ASC lands if the Department so wishes, since trapping is not inconsistent with salmon habitat conservation.

- Fishing

Fishing for brook trout, smallmouth bass and other species will continue consistent with Maine State rules and regulations. All anglers should note that the taking of Atlantic salmon is prohibited by Maine law. ASC does not intend to act as an enforcement agent for Maine state fishing regulations; however in the event that any violations of these regulations is made known to ASC staff, or they witness the taking of Atlantic salmon they will report such activities to the Maine Warden Service.

- Canoeing, Hiking, Cross Country Skiing, Mountain Biking

ASC views low impact recreational activities such as canoeing, hiking, cross country skiing and mountain biking as ideal methods of access to the Corridors. There will be no restrictions on such activities. The Corridors will be under a “carry in, carry out” litter policy. Mountain biking should only occur on existing trails and roadways. In the event that these policies are not adhered to, ASC reserves the right to modify access.

The ASC does not intend to construct or allow the construction of additional trails for these recreational activities, as there is not a high demand. In the event a public interest group identifies the need for additional access, ASC will consider these requests on a case-by-case basis.

- Camping

Three primitive campsites are available to overnight campers and canoeists at the outlet of Gilman Brook, Curry Landing and Little Falls (Delorme, 1999). ASC does not intend to develop vehicular access or maintain these sites or develop new campsites within the Corridor or along the rivers. The campsites are currently used on a first come first serve basis and will continue to be available on this basis. ASC does not intend to regulate other camping activities located off the river, however the removal of trees to develop a campsite is prohibited. In the event a need/demand is identified within the Corridor, ASC will investigate the possibility for additional sites. Open fires are prohibited on any ASC-owned land, however, a bill can be introduced to the Maine Legislation to grant the Maine Forest Service permission to manage fire permits if the need arises.

- Snowmobile/ATV

The current level of ATV (2 and 4 wheel) use on the designated ATV trail is acceptable due to the active stewardship and trail maintenance activities accomplished by local and regional ATV clubs. One existing ATV trail passes through the ASC lands. This trail is a gravel road that comes within several-hundred feet of the west bank of the Dennys River and includes a culvert crossing over a major tributary (Curry Brook). It is the ASC's intent to coordinate with the local ATV club to periodically inspect this crossing and institute an ongoing inspection process. This is considered a priority because it is one of the few stream crossings in the subject lands and could pose a threat of sedimentation if proper BMPs are not used, monitored, and maintained. The ASC does not intend to develop additional trails for ATV use. However, in the event that current access on adjacent properties is restricted, the ASC will consider providing new access in LUZs and GUZs within the corridor if requested by stakeholders.

“Rogue riders” who do not utilize designated roads/trails contribute to nonpoint sediment pollution, and in some instances can degrade or even destroy sensitive habitat for Atlantic salmon as well as other species identified within the Corridors. ATV use on the ASC lands will not be permitted except for on existing, designated roads/trails.

Additionally, access is limited to recreational vehicles (snowmobiles and ATVs) only. Snowmobiles have a minimal impact to Atlantic salmon because they are utilized during snow cover when the ground is frozen which is less likely to contribute to sedimentation. However, snowmobiles are to remain on marked trails at all times. Off-road trucks and SUVs are not allowed within the Corridors except on existing roadways. ASC proposes to coordinate with other regional and local efforts geared to off-road rider education to identify acceptable and allowed activities within the Corridors.



## **6.0 OTHER LAND USES**

### **6.1 Gravel Pit Agreement with the Town of Dennysville**

The ASC has granted the Town of Dennysville access to the sand and gravel pit which is located on a 10 acre parcel of land 600 feet off the east bank of the Dennys River (Appendix A, Figure 6) to extract sand or gravel solely for municipal purposes for a term of 50 years (Appendix E). There is no limit to the amount of sand and gravel that can be mined. In the event the pit is still viable and active at the end of the 50-year lease, ASC reserves the right to renegotiate or terminate the agreement at that time. As the pit is less than five acres in size, it is not jurisdictional through DEP. If the footprint of the site is enlarged to five acres or more, the town of Dennysville will be responsible for obtaining all necessary permits and approvals. However, the ASC reserves the right to mine this gravel pit to maintain their roads.

Development of additional sand and gravel pits is not advised in the Corridors due to the potential impact of runoff and sedimentation into surface waters. The mining of sand and gravel is not a priority for the ASC, is not consistent with the LMP goals, and will not be allowed in any areas other than the existing pit discussed above.

### **6.2 Water Withdrawals**

There are no known water withdrawals for private or commercial (irrigation) purposes. In light of the fact that unregulated or improperly located, direct water withdrawal has the potential to negatively impact salmon habitat and recreational activities, use of any portion of the subject lands for such activities in the future will not be allowed.

### **6.3 Structures**

No new structures are proposed within the Corridor at this time. In general, new structures are not compatible with the habitat and recreational/aesthetic objectives of the ASC and the local stakeholders. As discussed previously, in the future new boating

access may be identified as a need within the Corridors. In the event this does become an issue, the ASC may consider the construction of such facilities if requested by stakeholders.

Although not proposed at this time, a river-specific Atlantic salmon hatchery has been identified as the single potential major development project involving structures that would be consistent with overall goals and objectives. There are no immediate plans to develop such a facility. The ASC will consider construction of such a facility if requested by stakeholders.

## **7.0 LONG-TERM FORESTRY OBJECTIVES**

As indicated within the RMZ definitions and allowable uses, some degree of forestry operations is acceptable within LUZs and GUZs. Forestry operations, if conducted in an environmentally conscious manner, can and will occur within the Corridors. As the LMP is instituted over time, it is the goal that basal area will be maintained above 100 ft/acre of basal area per acre. ASC recognizes the fact that there are a limited number of stands within the Corridors that currently achieve this standard, however, long term stewardship and oversight of future forestry operations will aid in attaining this standard.

If the basal area is below 100 ft/acre of area in a particular stand or tract, no harvesting may occur. Exceptions to this standard will be reviewed by the ASC and may include variances for specific areas on a case-by-case basis (*e.g.*, areas impacted by pest infestation or disease, as well as ice damage).

### **7.1 Timber Cutting**

Large scale forestry in the project area is not advised, and is not a goal of this LMP. However, limited forestry operations that are consistent with the HPZs identified in Section 4.2 will be employed by the ASC and/or private forestry subcontractors to the ASC. Any profits associated with and/or generated from forestry operations within the Corridors will be utilized by the ASC to fund ongoing stewardship and management costs for these areas.

#### **7.1.1 Exceptions/Stand Management Considerations**

Where timber harvesting does occur, uneven aged or extended shelterwood silvicultural systems will be encouraged to promote the development of natural community types, provide a variety of forest age classes and upland habitat types, provide windfirm conditions, and be protective of water quality.

It is not the intention of ASC to employ active (*e.g.*, cutting or burning) management of the forest for habitat improvement for species other than salmon.

If another agency (*e.g.*, IFW) chooses to pursue a management activity (*e.g.*, limited tree removal to improve deer wintering habitat) this may occur with ASC's permission as long as the activity is consistent with salmon habitat protection and the resource zone use. Similarly, management of the forests for fire control is not planned by ASC, but may be pursued by the Maine Forest Service if they desire and if consistent with salmon habitat protection.

Exceptions to the no-cut standard for the HPZ, or to the minimum stocking levels for the LUZ and GUZ will be reviewed by the ASC and may include variances for specific areas on a case-by-case basis. For example, an exception might be made for salvage cutting in areas impacted by pest infestation or disease, wind events, or ice damage. Where such damage poses a potential negative effect on salmon habitat (*e.g.*, a pulse of mature trees falling into the river and causing potential debris dams), removal of standing diseased trees or dead trees (fallen or standing) along the shoreline might be considered acceptable. Since the HPZ tends to be uneven aged and comprised of multiple species in the existing condition, the potential for disease or insect outbreaks to cause conditions warranting timber removal is currently considered to be very low.

Other examples of potential forest stand management that might be allowed to enhance salmon habitat (or prevent negative effects to salmon habitat) could include stand management to encourage diverse, uneven-aged stands, and efforts to encourage specific stand types for specific objectives. One reason for pursuing the former is to create stands that are diverse in terms of age and species composition so that large wood inputs to the in-stream habitat occur at a relatively constant rate instead of in pulses. An example of a reason for pursuing the latter form of stand management would be to replace softwood stands with hardwood stands to raise the pH of runoff and seepage to the streams from the watershed since softwood stands generate more acidic runoff/seepage than hardwood stands (all else being equal), and pH (and related water chemistry parameters) may be an important component of salmon habitat. Since small-scale stand management is not likely to influence pH in a significant way, stand manipulation in an attempt to affect stream chemistry is considered unlikely unless for research purposes.

Stand composition also affects beaver populations, and it is conceivable that the ASC could consider stand manipulation to discourage beaver in a particular area if this were considered to positively affect salmon habitat. Overall, it is anticipated that stand management to enhance or protect salmon habitat will not be a frequent occurrence, however it is important to acknowledge the potential for stand management within the HPZ and other zones where it can improve/maintain salmon habitat. There may also be some reasons for conducting stand management that are not apparent now but may become apparent in the future as the knowledge-base for salmon habitat issues grows.

Lastly, salmon habitat objectives should be considered when replanting harvested areas or when leaving canopy trees as part of shelterwood management. For example, where site conditions allow hardwoods might be favored over softwoods to influence water chemistry parameters, or where beaver control is desired, aspens and other favored beaver foods could be discouraged. Any such plan to favor specific species should be incorporated in a written plan and may only occur with permission from the ASC.

#### 7.1.2 Cutting Standards

General standards, consistent with the Resource Management Zones definitions, that ASC will employ for forestry operations include:

- Forest activities will generally be done during the winter during frozen conditions to minimize soil disturbance.
- Where possible, low-impact methods of wood extraction will be used.
- Leave large dead trees and dead snags for wildlife.
- Leave large crowned beech and red oak for mast production and stems of other species such as black cherry, with particularly high wildlife food or cover value.
- Use BMPs such as seeding haul roads with conservation seed mix and other practices to reduce potential sedimentation impacts.

- Maintain windfirm conditions in the RMZ by maintaining minimum of 100 ft<sup>2</sup> basal area per acre stocking requirements in the LUZ.
- All harvest operations should be inspected by the Steward (if this position is created as recommended) or another suitable organization deemed credible by the ASC (e.g., Washington County Soil & Water Conservation District or Maine Department of Conservation).

ASC will require that any forestry contractors develop, for ASC approval, a forestry management and operation plan prior to removing timber from the Corridor lands. These management plans must comply with the RMZ standards and requirements. ASC will consider variances from this as part of a forestry management plan upon request.

## 7.2 Chemical Applications

The Board of Pesticide Control (BPC) has authority to designate areas where pesticide use may be restricted in order to protect the health, welfare and the environment. Criteria for such a designation include protecting an endangered or threatened species and its habitat, and the quality of surface or groundwater. The Dennys River corridor is banned from any aerial application of pesticides (Maine Atlantic Salmon Task Force, 1997).

The area where aerial application of pesticides is banned is described as follows: Commencing at the dam at the foot of Meddybemps Lake and extending down the Dennys River to the Gilman Dam, the area includes all land within one-half mile of either bank of the Dennys River; commencing at the Gilman Dam, and extending down the Dennys River to its entrance into Dennys Bay. This area includes all land within one mile of either bank of the Dennys River (Board of Pesticide Control, 2000).

No chemical sprays, powders, pellets, etc. shall be utilized within any HPZ unless there is written permission from the Executive Director and if in compliance with regulations set forth and approved by the BPC. Within the RMZs, chemical sprays shall be used in emergencies only. An emergency could, for example, include a spruce

budworm epidemic where a large pulse of wood threatens to cause erosion or debris jams. The ASC may grant a variance in the event of pest infestation, but this will occur only within the Limited and General Use Zones and only if permissible by BPC.

### 7.3 Logging Road Development

Logging roads have the potential to contribute to sedimentation near culverts or bridge crossings and can encourage beaver populations to migrate and multiply by providing stream crossing locations at which to construct a dam (*e.g.* the sound of rushing water through a culvert attracts beavers to the area). Impacts associated with road construction are generally not compatible with the RMZ definitions and the overall LMP goals to protect water quality and salmon habitat.

Many of the roads have not been used for forestry since the most recent epidemic of spruce budworm (*Choristoneura fumiferana*) in eastern Maine of the early 1970's to early 1980's. Disuse has since allowed saplings and small trees to take over these areas. Venture Brook Road, especially at the Curry Brook crossing, has been maintained consistently as it is a major route of travel for forestry and recreational vehicles since its development. There are no other stream crossings within the Corridors that are actively used for forestry. As addressed in Section 4.2, the potential for impacts to water quality decreases outside of the 250 ft no-cut zone proposed.

No new logging roads are currently necessary within the Corridors. In the future, new logging roads and skid trails would be permitted only within suitable areas outside of the HPZ. As a condition of any subcontractor forestry operations occurring within the Corridors, ASC will require contingencies within the contractor's forestry management plan to maintain and repair any existing logging roads used during the operation. In addition to minimizing the potential for erosion and sedimentation and minimizing forest fragmentation, an additional reason to not construct new roads is that each new road would be associated with maintenance costs.

#### 7.4 Fir Tipping

The practice of fir tipping will be allowed by ASC, as this activity is considered a low impact land use of the Corridors and is economically important to the surrounding area. ASC will make arrangements to survey the Corridors and identify specific parcels appropriate and feasible (due to the presence of accessible fir stands). Parcels where tipping is allowed will be designated by flagging and highlighted on topographic maps made available to potential tippers. These parcels will be made available through a lottery, to prospective tippers on a five-year basis. Individuals or groups who are awarded the parcels will be responsible for adhering to all land use standards and RMZ specifications, identified in the LMP and adherence to these standards will affect eligibility for future lottery participation. ASC will employ Maine Forestry Service tipping standards, to ensure low impact, sustainable harvesting. ASC believes this long-term permitting would ensure that tipping is not done excessively (the goal of ASC is for the land to be used for generations to come) and would minimize administrative effort.

The Steward position is critical to the implementation of the LMP. In the event that a Steward position is not funded, this element as well as forestry and coordination with ASC via an advisory group and regional stakeholders, will not occur.

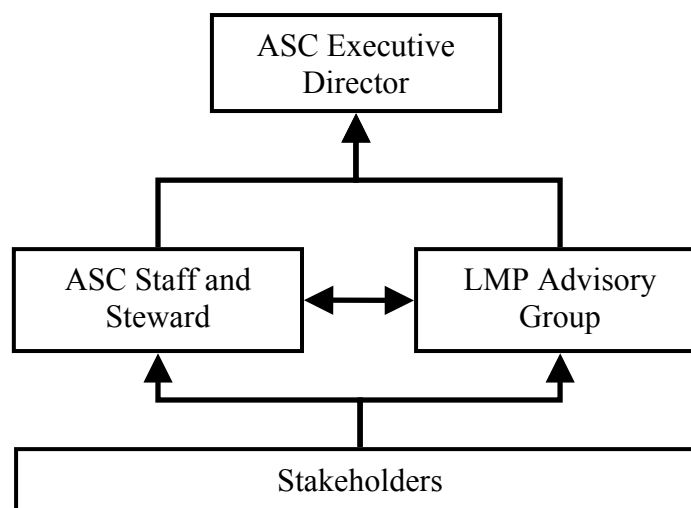


## 8.0 *LAND MANAGEMENT PLAN IMPLEMENTATION, STEWARDSHIP AND ENFORCEMENT*

ASC, as the primary steward of the Corridors, finds itself in the unique position of establishing proactive goals, objectives, and guidelines for Atlantic salmon habitat preservation and protection. As proponents of the LMP, ASC is also responsible for ensuring these goals and guidelines are achieved. Ongoing implementation of the LMP will be provided by ASC staff with input from stakeholders and a Corridor Advisory Group. The Advisory Group will be comprised of local stakeholders, state and federal agency personnel, and other interested parties to address ongoing concerns and issues related to the Corridors. The advisory group should be comprised primarily of individuals with a professional focus on natural resource conservation and land management. ASC proposes to establish a steward position to act as a liaison between the Advisory Group, stakeholders, and the Executive Staff of ASC. Additionally the Steward will be responsible for day-to-day implementation of the LMP guidelines, ongoing monitoring activities and oversight of forestry activities within the Corridors.

Figure 3 outlines the decision making process in regard to the LMP and overall Corridor management.

Figure 3. Decision-Making/Communication Flow Chart



The executive director of the ASC has the ultimate responsibility to implement the LMP, which includes overseeing all management activities, as well as granting any exceptions to

standard operating procedures described in the plan. The director will receive input for decision making from ASC staff (including the Steward) and from the Advisory Group. These groups will work together, and with stakeholders to observe compliance with the management plan and to make recommendations for changes or variances to the plan policies.

#### 8.1 Steward Position

It is strongly recommended that a steward position be created to monitor the Corridors, enforce policies and guidelines identified in this LMP, and to serve as point of contact for the stakeholders, recreational users, and others interested in accessing the area. The position would serve as the point person for identification of potential changes in the LMP that address access, use, and management practices. This person need not be dedicated solely to the ASC lands in the Dennys/Cathance corridor and could be responsible for other ASC lands as well (*e.g.*, along other salmon rivers in Washington County). The Steward would oversee the fir-tipping program, manage any forestry operation, and generally be in charge of day-to-day operations within the Corridors. As a representative of ASC lands, the position would include communication, cooperation, and outreach activities with local stakeholders such as the Dennys River Watershed Council, Dennys River Sportsman's Club, Townships and the Quoddy Regional Land Trust for public outreach and education. This position is expected to be funded by ASC but employed by a non-state, local or regional organization such as the Washington County Soil & Water Conservation District, Bureau of Parks and Lands or a local watershed association.

It is the intent of the ASC to set up a "stewardship endowment" fund to cover costs associated with this position as well as provide funding for day-to-day expenses incurred through the management of the Corridors. The endowment would be partially funded through any revenue generated from tipping fees, and the sale of timber harvested within the Corridors, as well as a portion of any additional monies obtained through state and federal grants associated with rare threatened and endangered species programs relevant to the Corridors. The ASC should develop a specific budget and position description in conjunction with the LMP. This position is intended for the Corridors only. Additional funding will be required if the Steward is to manage other ASC-owned

lands as well to make this a full time position. The estimated staffing and budget requirements are detailed in Table 3 below in 2003 dollars.

Table 3. Staffing and Budget Requirements

Description	Quantity	Units	Unit Price	Units	Total
Travel	10,000	miles	0.36	/mile	3,600.00
Office Overhead <sup>†</sup>	500	\$	12.00	/month	6,000.00
Equipment & Supplies	250	\$	12.00	/month	3,000.00
Printing & Mailing	100	\$	15.00	/month	1,500.00
Insurance & Benefits <sup>*</sup>	12	\$	300.00	/month	3,600.00
Salary	960	hours	20.00	/hour	19,200.00
<b>Grand Total</b>				<b>\$</b>	<b>36,900.00</b>

<sup>†</sup>Assumption is made that Steward will work from home office.

<sup>\*</sup>Steward pays the difference if cost is higher.

## 8.2 Advisory Group

An advisory group will be established with members from the ASC and other willing participants from local, state and federal stakeholder groups. This group would periodically meet to address land management issues within the Corridors. The Steward is expected to work in conjunction with this group in developing recommendations regarding future amendments or modifications to the LMP. The advisory group will identify specific individuals to perform the role of secretary of this committee (*i.e.*, organizing meetings, sending communications, writing meeting minutes, etc.). This committee would be *advisory* only. Decisions regarding land management implementations and LMP modifications are the ultimate responsibility of the Executive Director of the ASC.

## 8.3 Operations & Maintenance Costs

Other operations and maintenance costs associated with the plan will be incurred based on the allowable activities, and operating policies described in the plan. Anticipated costs for these activities are described below.

### 8.3.1 Fir Tipping

ASC will determine a fir tipping fee based on local and regional standards for such activities. These tipping fees will be assessed in conjunction with LMP review and modified as necessary.

### 8.3.2 Road Maintenance

The ASC would require an annual operating budget of approximately \$6,550 (in 2003 dollars) for the maintenance of existing roads and the Dodge Road Bridge inspection as outlined in Section 5.1.1. See Table 2.

Table 4. Yearly Road Maintenance and Bridge Inspection Budget

Description	Quantity	Units	Unit Price	Units	Total
Culvert	2	each	200.00	/each	400.00
Spot Graveling	100	yards	5.00	/yard	500.00
Ditch Cleaning	200	feet	2.00	/foot	400.00
Grading	4	hours	50.00	/hour	200.00
Saplings	100	each	2.00	/each	200.00
Hydroseed	1,000	feet <sup>2</sup>	0.05	/feet <sup>2</sup>	50.00
Inspection	48	hours	100.00	/hour	4,800.00
<b>Grand Total</b>				<b>\$</b>	<b>6,550.00</b>

### 8.3.3 Illegal Trash Dumping

Currently, the remote nature of and limited access to the Corridor have precluded any large scale dumping. Monitoring the Corridors for illegal dumping will be a task associated with the Steward. Dumped trash will be removed immediately in order to disrupt a pattern of trash dumping in the area.. It is anticipated that local stakeholders will help the Steward by being the “eyes and ears” to identify persons dumping or otherwise degrading this public resource.

#### 8.3.4 Boundary Line Maintenance

The property lines will be maintained by using the same guidelines established by the Bureau of Public Lands under the Department of Conservation, which is every five years. Boundary lines serve not only to establish the legal separation between adjoining owners, but as travel lanes for recreation and access. The objective is to leave some trees to identify and place the line location, not to clear it completely. Future maintenance of the boundary line will not require professional survey work but only a compass to locate old evidence previously recorded, or provide a line of sight for spotting (BPL, 1992). This boundary line could also be developed and used as an access trail to the Corridors if current private access is denied.

As a rule of thumb, approximately \$500/mile should be budgeted for boundary line maintenance depending on the experience of the contractor. Adjoining landowners are traditionally expected to share the cost or they may agree to do certain sections to arrive at an equitable long-term cost-share (Hall, Personal Communication, 2003).

#### 8.3.5 Forest Management

Enhancing wildlife habitat was a topic identified by the LMP Advisory Group and local stakeholders (*e.g.* planting conifers along the river bank to discourage beaver habitat and adding coarse woody debris inputs to enhance salmon habitat), and will be a component of all forest harvest operations (See Section 7.1). ASC believes that maintaining intact forested RMZs should allow most desired habitat functions to occur at optimal levels on their own (without specific management activities), and therefore no forest management to enhance salmon habitat is recommended at this time except as mentioned.

#### 8.3.6 Fire Control

There will be no further road construction to augment access specifically for fire control. The ASC will not dedicate staff towards this activity, but will work in conjunction with local responders and the Maine Forest Service to identify access for fire suppression. The first responders for the Corridors are the Dennysville, Meddybemps, and Cooper volunteer fire departments, depending on fire location. In the event these departments cannot contain the fire, these departments will contact the Downeast District of the Maine Forest Service for support.

Water withdrawal, for the purpose of fire suppression shall be permitted only if there is no other alternative (*i.e.*, only as a last resort). The Steward will be responsible for working with the municipal departments to develop a fire suppression plan that will prioritize water sources based on location and direction of fires.

The Steward will be responsible for conducting a periodic review and standard survey of potential fuel buildup within the corridor to minimize the risk of forest fires.

### 8.4 Instream and RMZ Restoration Opportunities

#### 8.4.1 Research and Experiments

Where there is opportunity to conduct research that would not pose a threat to salmon habitat, scientific experimentation and research will be supported and in some instances undertaken by the ASC. The ASC will require prior review and approval of any research project proposed by individuals or groups by both ASC staff and the LMP advisory group. Research might be conducted by the ASC, or if an outside group (*e.g.*, a PhD student from UMaine) proposed a research project, that project would require approval from the ASC.

The ASC may solicit Atlantic salmon-related research from outside interests, such as educational institutions, state and federal agencies to address such issues as beaver impact and control within the Corridors, water quality monitoring, recreational studies, etc.

It is recommended that continued river monitoring, coordination among other state and federal agencies, and a liming feasibility study on the Dennys be investigated further.

#### 8.4.2 Restoration Opportunities

ASC will support, act in an advisory capacity, and implement habitat restoration activities within the Corridors. This is an activity that is consistent with the goals of the LMP. Restoration opportunities (*e.g.*, eroded trails/roads) have been identified in the Dennys River Watershed Survey for Nonpoint Source, (Sheafe, 2000) and efforts are already underway to remedy these areas. ASC encourages watershed groups and individuals to explore further opportunities to enhance such activities. As a supporter or proponent of restoration activities, ASC may be a conduit for future specific grant opportunities. The Steward will serve as a point person for such inquiries and proposals.

## **9.0     *INTEGRATED DOCUMENTS***

The following are abstracts from documents that have been integrated into this LMP. In the event of a conflict, plans implemented and managed by ASC shall supercede all other plans that include land within the Corridors.

### **9.1     Atlantic Salmon Commission Dennys River Instream Habitat Plan**

The Atlantic Salmon management plan will develop strategies to maintain or restore ecosystem function within the Dennys River watershed such that the system is capable of supporting self-sustaining Atlantic salmon populations.

The ASC annually assesses Atlantic salmon juvenile, smolt, adult return, and redd numbers to evaluate the status of the population in the Dennys. Adaptive population management will be based on integrating population data with stocking, physical habitat quantity and quality, stream discharge, and water quality data. Obstacles to achieving juvenile and smolt production and survival objectives will be identified and strategies developed to minimize the threats. The plan will also coordinate ASC, IFW, and DMR fisheries management within the watershed.

### **9.2     Dennys River Nonpoint Source Watershed Survey**

The purpose of this survey was to document nonpoint source (NPS) pollution areas that were detrimental to Atlantic salmon habitat areas and to build community support through education of BMPs and awareness of the effects of sedimentation on aquatic ecosystems. Documented NPS areas were entered into the Project SHARE NPS Database for the purpose of restoration planning, fundraising and documenting success.

### **9.3     Dennys River Watershed Council Strategic Plan**

This Strategic Plan is intended to provide direction to the Dennys River Watershed Council; to create and implement a dynamic community-based watershed management plan for stabilizing and improving water quality and thereby benefit fish



and wildlife throughout the Dennys River watershed; to work with municipalities to protect surface and groundwater quality; and to educate watershed residents in the benefits of water quality and riparian protection.

#### 9.4 Dennys River Water Management Plan

Dennys River water management has historically been based upon best professional judgment of ASC regional staff concerning the instream flow needs of Atlantic salmon. The purpose of this study is to develop a quantitative habitat-based water management strategy based on an Instream Flow Incremental Methodology (IFIM) model of the Dennys River. This report presents the results of the IFIM study and will be utilized by MASC to manage Meddybemps Dam gate operation to target habitat-based flows in the Dennys River. The availability of water from the Meddybemps Lake watershed to meet target flows under dry/normal/wet years, and the effect of meeting these targets on Meddybemps Lake levels have also been evaluated from a hydrologic water budget analysis and an engineering review of gate hydraulics.

#### 9.5 Dennys River 319 Nonpoint Source Pollution Watershed Management Plan

In April 2003, Project SHARE and the Dennys River Watershed Council will begin the development of an MDEP-sponsored Nonpoint Source Pollution Management Plan for the Dennys River Watershed. The goal of the Dennys River Watershed NPS Management Plan is to identify and protect areas of high water quality and to identify and improve those areas of poorer water quality or NPS pollution within the watershed. This will be achieved by bringing together stakeholders from industry, government, non-profit organizations, municipalities, and the community to develop strategies for both remediation of current NPS sites and prevention of future NPS pollution in a coordinated and organized fashion. The process will include several facilitated research and discussion sessions, several public outreach activities, prioritization of NPS sites, development of a water quality profile using existing data, and creation of partnerships for implementation projects.

The Dennys River is a priority watershed that appears on several priority water quality or NPS listings including:

- 1) Protection under the Maine Atlantic Salmon Conservation Plan/ the Federal Endangered Species Listing
- 2) The Maine DEP Nonpoint Source Priority Watershed List
- 3) EPA Superfund Site Listing (Eastern Surplus Supply Co., Meddybemps)
- 4) MDEP Biomonitoring Retrospective, 1999, Non-attainment of Aquatic Life Standards
- 5) MDEP Maine Salmon Rivers Water Quality Monitoring Program (1999-2001)
- 6) Dennys River 319 NPS Survey 2000 documents 20 NPS sites relating to road erosion (WIFAP Project #2000R – 41A)

Water quality issues in the watershed include erosion and sedimentation from ATV trails, camping and logging roads, bridges, fords, ditches, road crossings, faulty septic systems, poorly managed lake-side development including phosphorus loading runoff, agricultural pesticide contamination, PCB contamination, poorly maintained sand/salt facilities, and potential water withdrawal or reduced water flow. Approximately 35% of the watershed has been surveyed with 20 NPS sites documented and an additional 150 undocumented sites estimated on the main stem of the river and around the lakes. Currently, there is very little water quality information on the upper reaches of the river and its tributaries. Lastly, there are several NPS projects being launched concurrently in the watershed involving many municipal, state, federal, and nonprofit agencies.

A Dennys River Watershed Management Plan will:

- allow area partners and stakeholders to come together and cooperatively locate, document, and prioritize NPS sites and plan for their implementation,
- provide a much-needed vehicle for coordination, information sharing, and focus of ongoing concurrent projects.
- provide more information regarding the effects of PCB contamination on aquatic life, the presence of pesticides in the surface waters, the effects of erosion and

sedimentation on the riverbed, and the potential for algal blooms in area lakes as a result of the 2001 drought and increased development.

## **10.0 PLAN UPDATES, MONITORING AND REVISIONS**

ASC will conduct an annual internal review of the LMP to assess any changes that may affect the Resource Management Zones. These may include identification of new wildlife habitats, archaeologically sensitive areas, and recreational use issues. Recommendations and action items given in the LMP should be reviewed annually based on changing land uses and access needs. The proposed life of the plan is 10 years (*i.e.*, after ten years, the plan will be updated and revised as necessary). In the event specific action items or compelling issues are identified before the 10 year review, either by the ASC or other groups, the LMP advisory group and stakeholders will be notified and will hold a review meeting. If these issues are deemed significant the LMP may be revised to address such at that time. However, the ASC Executive Director has the ultimate decision making responsibility for updating the plan, with input from ASC staff and the Advisory Group (Figure 2).

## 11.0 GLOSSARY OF TERMS

### A

**Access:** The ability or right to approach, enter, exit, or make use of: *has access to the restricted area.*

**Acquisition (Land):** To gain possession of land

**Alluvium:** Sediment deposited by flowing water, as in a riverbed, flood plain, or delta

**Anadromous:** Migrating up rivers from the sea to reproduce in fresh water. Used of fish.

### B

**Basal area:** The cross-sectional area of a tree 4.5 feet above ground.

**Bedrock:** The solid rock that underlies loose material, such as soil, sand, clay, or gravel.

**Best Management Practices (BMPs):** Practical and economically achievable practices for preventing or reducing nonpoint source pollution.

**Buffer area or zone:** An area of land and/or plants around a stream or waterbody of sufficient width to lessen entrance of pollutants (fertilizers, pesticides, eroded soil and fire retardants) into a waterbody, provide shade, limit erosion, and promote natural influx of plant nutrients.

### C

**Critical habitat:** Areas officially designated by the Secretary of Interior or Commerce in the Endangered Species Act as needed for survival and recovery of listed species. Specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require especial management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery

### D

**Deadwater:** River water with little to no flow or movement.

**Degradation:** A decline to a lower condition, quality, or level.

**Denitrification:** A step in the nitrogen cycle that involves the reduction of nitrates into nitrite, nitrous oxide, ammonia or elemental nitrogen. It is carried out by certain forms of denitrifying bacteria in the soil and serves as an important part of the breakdown of dead organism. It is responsible for the loss of much of the soil's natural and synthetic fertilizers. This process is favored most in warm, anaerobic conditions.

**Detritus:** Partially decomposed particles of organic matter.

**Divestiture (land):** A selling off or otherwise dispose of land or an investment.

**Downeast Maine:** The coastal areas of Hancock and Washington counties.

**Drainage:** The basin, watershed, or collection of all waters of a river system.

## E

**Embeddness:** The degree to which the interstitial spaces between coarse-grained gravel beds are filled with fine particles (i.e., sand, silt, clay).

**Erosion:** The process by which the surface of the earth is worn away by the action of wind, ice or water.

**Essential Fish Habitat:** “Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The conservation of essential fish habitat is an important component of building and maintaining sustainable fisheries.

## F

**Fault:** *Geology.* A fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are displaced relative to one another and parallel to the plane of fracture. Also called *shift*.

**Floodplain:** Land built of sediment that gets covered with water as a result of the flooding of a nearby stream.

**Forage:** The act of looking or searching for food or provisions.

**Fry:** Small fish, especially young, recently hatched fish.

## G

**General Use Zone (GUZ):** Areas within the Corridors that have no restrictions on low-impact land uses.

**Geographic Information Systems (GIS):** GIS is a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, *i.e.* data identified according to their locations.

**Glacial till:** Glacial drift composed of an unconsolidated, heterogeneous mixture of clay, sand, pebbles, cobbles, and boulders.

## H

**Habitat:** The area or environment where an organism or ecological community normally lives or occurs: *a marine habitat*.

**Habitat Protection Zone (HPZ):** Areas within the Corridors that warrant the highest level of protection that include riparian areas of the river and tributaries, wetland and designated habitat areas.

**Harvesting:** The felling, skidding, loading and transportation of woodland products, roundwood or logs.

**Herbaceous:** With the characteristics of an herb; a plant with no persistent woody stem above ground.

**Hydrology:** Surface and groundwater flow patterns of a watershed.

**Hydroseed:** A mix of seed, water, fertilizer, tackifier (glue), and green wood fiber mulch to create a slurry. When the slurry dries, it creates a crust over the ground, protecting the area from erosion. The crust protects the seeds from being washed away in the rain or eaten by birds.

## I

**Invertebrate:** Lacking a backbone or spinal column; not vertebrate.

**Irrigation:** To supply (dry land) with water by means of ditches, pipes, or streams; water artificially.

## J

**Juvenile (salmon):** Not fully grown or developed; fry, parr, smolt stages of the salmon lifecycle.

## K

**Kame:** A short ridge or mound of sand and gravel deposited during the melting of glacial ice.

**Kettle:** *Geology.* A depression left in a mass of glacial drift, formed by the melting of an isolated block of glacial ice.

## L

**Landlocked (salmon):** Subspecies of *Salmo salar* confined to inland waters, as certain salmon.

**Limited Use Zone (LUZ):** Areas within the Corridors that have some land use restrictions.

## M

**Mainstem:** The principal channel of a drainage system into which other smaller streams or rivers flow.

**Migration:** To change location periodically, especially by moving seasonally from one region to another.

## N

**Nonpoint source pollution (NPS):** Surface runoff transport of debris, sediment and/or pollutants into streams, lakes, wetlands and groundwater at multiple locations rather than one discharge location.

## O

**Outlet:** A stream that flows out of a lake or pond.

**Outwash:** Sediment deposited by streams flowing away from a melting glacier.

## P

**Palustrine wetlands:** Isolated wetlands that may be connected wet areas and include marshes, swamps, and bogs although may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes.

**Parr:** A young salmon during its first two years of life, when it lives in fresh water.

**Persistent emergent:** Emergent hydrophytes that normally remain standing at least until the beginning of the next growing season; *e.g.*, cattails.

## Q

## R

**Redd:** A spawning nest made by a fish, especially a salmon or trout.

**Riparian:** The land and vegetation zone bordering a water body. Also see Streamside management area.

## S

**Salmonid:** Of, belonging to, or characteristic of the family Salmonidae, which includes all salmon, trout, and whitefish species.

**Sedimentation:** The act or process of depositing sediment.

**Shrub:** A woody plant which at maturity is usually less than 6 m (20 feet) tall and generally exhibits several erect, spreading, or prostrate stems and has a bushy appearance; *e.g.*, speckled alder.

**Slope:** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

**Smolt:** A young salmon at the stage intermediate between the parr and the grilse, when it becomes covered with silvery scales and first migrates from fresh water to the sea.

**Stream:** A water course that: (1) has ordinary high watermark, (2) has beds and banks, (3) flows at least periodically, (4) has an easily identifiable beginning and end, (5) does not lose its character as a water course even though it may break up and disappear temporarily and reappear down stream.



## T

**Threatened species (Endangered Species Act):** Still abundant in its natural range but is declining in numbers and likely to become endangered.

**Till:** See Glacial till.

**Tract:** A specified or limited area of land: *developing a 30-acre tract*.

**Trail:** A marked or beaten path, as through woods or wilderness.

**Tree:** A woody plant which at maturity is usually 6 m (20 feet) or more in height and generally has a single trunk, unbranched for more than 1 m or more above ground, and a more or less definite crown; *e.g.*, red maple.

**Tributary:** A stream that flows into a larger stream or other body of water.

**Turbidity:** Having sediment or foreign particles stirred up or suspended; muddy: *turbid water*.

## U

## V

**Variance:** License to engage in an act contrary to a usual rule: *a zoning variance*.

**Vernal pool:** A contained basin depression, usually formed in the spring of the year, lacking a permanent above ground outlet.

**Viewshed:** The spatial zone visible across a landscape from a point location.

## W

**Watershed:** The common land area that is drained by a lake or river system. The measured area of any given portion of a watershed is defined as the Drainage Area.

**Wetland:** An area where water is near, at or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water loving) vegetation and/or which has soils indicative of wet conditions.

**Windfirm:** The ability to withstand moderate to heavy winds without toppling.

## X

## Y

## Z

**Zone:** See Buffer area or zone.

## 12.0 LITERATURE CITED

- Beland, K. *et al.* Maine Atlantic Sea-Run Salmon Commission. *The Dennys River – An Atlantic Salmon River Management Report*. Bangor, Maine. 1982.
- Board of Pesticide Control. *Chapter 60: Designation of Critical Pesticide Control Areas*. Department of Agriculture, Food and Rural Resources. Augusta, Maine. 2000.
- Brokaw, Ron. Personal Communication. Department of Inland Fisheries & Wildlife, Machias, Maine, March 7, 2003.
- Bureau of Parks and Lands. *Boundary Line Maintenance Specifications*. Maine Department of Conservation. 1992.
- Caldwell, D.W. *Roadside Geology of Maine*. Mountain Press Publishing Company. Missoula, Montana. 1998.
- Champion International Corporation. Northeast Region. Forest Resources. *Riparian Management Guidelines*. 1997.
- Davies, S. and J. Sowles. *The Value of Headwater Streams and the Effects of Cutting Practices on Stream Ecology*. Maine Department of Environmental Protection. Augusta, Maine, 10 pp. 1984 (revised 1997).
- Degraaf, R. M., Mariko Yamasaki, William B. Leak and John W. Lanier. *New England Wildlife: Management of Forested Habitats*. Northeastern Forest Experimental Station. General Technical Report NE-144. 1992.
- Delorme. *Maine Atlas and Gazetteer*. 1999. Map 26 and 36.
- Dennys River Watershed Council. *Dennys River Watershed Council Strategic Plan*. Project SHARE. 2001.
- Dennysville Sportsman Club. *Salmon on the Dennys 1786-1988*. Dennysville, Maine.
- Department of Environmental Protection. *Water Classification Program*. Maine Revised Statutes Annotated. Title 38. Article 4-A. 2001.
- Endangered Species Program. *Critical Habitat. What is it?* US Fish & Wildlife Service. 2002
- Hall, J. Personal Communication. March 11, 2003.
- Haberstock, A.E., H.G. Nichols, M.P. DesMeules, J. Wright, J.M. Christensen, and D.H. Hudnut. *Method to Identify Effective Riparian Buffer Widths for Atlantic Salmon Habitat Protection*. Journal of the American Water Resources Association. Vol. 36(6):1271:1286. 1993.

- Johnson, C.W. *Bogs of the Northeast*. University Press of New England. Hanover, NH. 268 pp. 1985.
- Kleinschmidt Associates. *Method to Determine Optimal Riparian Buffer Widths for Atlantic Salmon Habitat Protection*. Report to the Maine State Planning Office, Augusta, Maine, by Kleinschmidt Associates, Energy & Water Resource Consultants, Pittsfield, Maine, 100+ pp. 1999.
- Kricher, J. C. and G. Morrison. *Eastern Forests*. Peterson Field Guides. Houghton Mifflin Company. Boston, Massachusetts. 1988.
- Maine Atlantic Salmon Task Force. *Atlantic Salmon Conservation Plan for Seven Maine Rivers*. 1997.
- Maine State Historic Preservation Commission website.  
<http://archaeology.umf.maine.edu/Maine/meddybemps.html>
- Sheafe, T. *Dennys River Watershed Survey for Nonpoint Sources*, Project SHARE. 2000.
- Spence, B. C., G. A. Lomnický, R. M. Hughes, and R.P Novitzki, *An Ecosystem Approach to Salmonid Conservation*. TR-4501-96-6057, ManTech Environmental Research Services Corp., Corvallis, Oregon (available from the National Marine Fisheries Service, Portland, Oregon), 356 pp. 1996.
- Stanley, J. G., and J. G. Trial. *Habitat Suitability Index Models: Nonmigratory Freshwater Life Stages of Atlantic Salmon*. Biological Sciences Report 3, US Department of Interior National Biological Service. 18 pp. 1993.
- Trettin, C., M.F. Jurgensen, D.F. Grigal, M.R. Gale, and J.K. Jeglum. *Northern Forested Wetlands. Ecology and Management*. CRC Press, Inc. 1997.
- Turner, Mark. Personal Communication. National Weather Service, Caribou, Maine, June 13, 2003.
- U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. *Guide to ESA Listing of Atlantic salmon*. 2000.
- U.S. Geologic Survey (USGS). 2000. USGS 01021200 Dennys River at Dennysville, Maine. [www.usgs.gov](http://www.usgs.gov). April 25, 2003.

## **APPENDIX A**

### **RESOURCE MAPS & MANAGEMENT ZONES**

**FIGURE 1: PROJECT LOCATION**

**FIGURE 2: GEOLOGIC RESOURCES**

**FIGURE 3: WETLANDS**

**FIGURE 4: TERRESTRIAL RESOURCES**

**FIGURE 5: SENSITIVE HABITAT**

**FIGURE 6: LAND USE**

**FIGURE 7: RESOURCE MANAGEMENT ZONES**

APPENDIX B

ADVISORY GROUP MEMBERS

<b>Advisory Group Members</b>	
Marty Anderson	NOAA Fisheries
Barbara Arter	Environmental Consultant
Greg Beane	Department of Environmental Protection
Ron Brokaw	Inland Fisheries and Wildlife
Charles Corliss	Land Use Regulation Commission
Molly Docherty	Natural Areas Program
Gary Edwards	Downeast Resource Conservation and Development
Dave Garcelon	Natural Resources Conservation District
Linda Gordon	Town of Meddybemps
Jay Hall	Bureau of Parks and Lands
Jay Haynes	H.C. Haynes
Rev. Bob Hinton	Dennys River Watershed Council
Steven Koenig	Project SHARE
Maurry Mills	Moosehorn Refuge
Morten Moesswilde	Maine Forest Service
Joe Nielsen	US Geologic Survey
Nate Pennell	Washington County Soil and Water Conservation District
Joel Pickelner	Quoddy Regional Land Trust
Jonathan Reisman	Town of Cooper
James Robinson	Dennys River Sportsman's Club
Tom Schaeffer	Inland Fisheries and Wildlife
Matt Scott	Sportsman's Alliance of Maine
Rob Scribner	Sunrise County Canoe and Kayak
Dan Smith	Wagner Forest Limited
Arthur Spiess	Historic Preservation Commission
Tom Squires	Department of Marine Resources
James Sullivan	Town of Dennysville
Barbara Vickery	The Nature Conservancy
Trevor White	Passamaquoddy Nation
Charlie White	Breakneck Mountain ATV/Snowmobile Club
Joe Wiley	Bureau of Parks and Lands
Cheryl Zwingman	Meddybemps Lake Association

APPENDIX C  
PUBLIC MEETING MINUTES

**MAINE ATLANTIC SALMON COMMISSION**

**DENNYS RIVER CORRIDOR MANAGEMENT PLAN/INITIAL PUBLIC INPUT  
MEETING**

**MEDDYBEMPS COMMUNITY CENTER**

**MEETING MINUTES-SESSION 1**

**ATTENDEES:** Alan Habershtock, Kleinschmidt Associates  
Barbara S. Arter, BSA Consulting  
Joe Wiley, IFW/DOC  
Joan Trial, ASC  
Linda Gordon, Selectman  
Charles White, Trailmaster  
Ed Bartlett, Dennys River Sportsman's Club  
Tracy L. Smith, Interested party  
Bill Cherry, Bill Cherry Forestry Service  
Maurry Mills, Dennys River Water Council  
Fred Kircheis, ASC  
James C. Sullivan, Dennysville Selectman  
John Wakin, Meddybemps Selectman  
Steve Koenig, SHARE  
Mary Anne Clancy, Bangor Daily News  
Marty Anderson, NOAA Fisheries  
Ray Robinson, Dennysville  
Jim Robinson, Dennysville  
Jon Christensen, Kleinschmidt Associates  
Allison Murray, Kleinschmidt Associates  
Torrey Sheafe, Kleinschmidt Associates  
Everett Gillespie, Meddybemps

**DATE:** November 14, 2002; 3:00 p.m. session

---

Current Land Uses Identified in the Project Area

- 1.0 Fishing
  - 1.1 Old Gilman Dam
  - 1.2 First Rips on River (Little Falls) is okay fishing
  - 1.3 Question: Why are salmon marked with different colors?
  - 1.4 Answer: They are marked according to where they are stocked in the river.
- 2.0 Access
  - 2.1 Current private access point at Gilman Dam (below school bus) which is located 7 miles downstream of Meddybemps
  - 2.2 Overnight campers total around 100/year



- 2.3 Rob Scribner (Downeast Canoe & Kayak) can confirm these numbers
- 2.4 Access is depending on flows from Meddybemps Dam (controversial)
- 2.5 Question of installing a historical interpretive sign at Gilman Dam
- 2.6 Answer: General consensus is to leave it the same without any signage
- 3.0 Camping
  - 3.1 Question: Is there a need for fire rings installed at potential camp sites at Stoddard & Little Falls?
  - 3.2 Answer: Operations & Maintenance/Safety issues. General consensus is to leave the campsites as they are.
- 4.0 Hiking/Biking/Cross County Skiing
  - 4.1 Access does exist to meet river uses but limited vistas, so the river is not currently a destination
  - 4.2 Potential Rails to Trails destination
  - 4.3 Current access trail is adequate.
  - 4.4 General consensus is that the current access is adequate and no new trails should be constructed.
- 5.0 Forestry
  - 5.1 Logging roads should be closed in the spring to minimize road maintenance
  - 5.2 Question: Should any more trees be removed?
  - 5.3 Answer: General consensus is not to remove any more trees from forest production in an economically depressed area
  - 5.4 Any revenue generated from forestry will be put back into stewardship/protection of the Project Area.
  - 5.5 Fir tipping should be allowed
  - 5.6 Forest should be managed for fire protection
- 6.0 Research
  - 6.1 There is a need to access the river for research purposes
- 7.0 Recreational Vehicles (ATVs & Snowmobiles)
  - 7.1 Trails should be closed in the spring to minimize damage to roads during mud season
  - 7.2 Access to these trails should continue although limit vehicular access
  - 7.3 Access/use at Cathance Lake outlet & Curry Brook area
  - 7.4 Snowmobile club grooms trails at their expense
  - 7.5 Trails could bring money into the area
  - 7.6 Look for chances to hook four-season access into certain areas
  - 7.7 Question: How about a new ATV trail from the top of the Project Area to the bottom?
- 8.0 Hunting
  - 8.1 Deer herds are disappearing
  - 8.2 Good bird hunting
  - 8.3 Bear baiting is not active on private land because of insurance issues
  - 8.4 Attracts stray ATVs
- 9.0 Trapping
  - 9.1 Limited activity with: fox, coyote, muskrat, beaver, bobcats
- 10.0 Existing River Crossings
  - 10.1 Curry Brook
  - 10.2 Gardiner Rips
  - 10.3 Venture Brook
  - 10.4 No identified fords on the mainstem

- 11.0 Ecotourism
  - 11.1 Question: Should the Project Area be marketed or just leave it alone?
  - 11.2 Ecotourism needs to be balanced with protection
  - 11.3 Very limited income/money from these activities
  - 11.4 Answer: Consensus is to not market the Project Area.
- 12.0 Fire Control/Management
  - 12.1 Fires should be by permit only
  - 12.2 Forest fire control ability is limited by access
- 13.0 Stewardship/Operation
  - 13.1 It is hoped that local conservation groups will adopt sections of the Project Area
  - 13.2 Education and outreach is an important goal for the young
  - 13.3 Coordination is important with 319 NPS Watershed Survey and 319 Watershed Management Plan by Project SHARE and state/local comprehensive plans
  - 13.4 Economics: How would outreach be funded?

**Maine Atlantic Salmon Commission**  
**Dennys River Corridor Management Plan/Initial Public Input Meeting**  
**Meddybemps Community Center**

**MEETING MINUTES-SESSION 2**

*Additional Attendance: Joan Trial, Allison Murray, Jon Christensen, Alan Habersstock, Torrey Sheafe*

**ATTENDEES:** Bob Hinton, Downeast River Coalition & Dennys River Sportsman's Club  
Jon Reisman, First Selectman, Cooper  
Charles Corliss, LURC  
James Hall, IF&W  
Thom Budzik, Resident of Meddybemps  
JoAnna Budzik, Resident of Meddybemps  
Deane L. Bradshaw, Dennys River Watershed Council  
**DATE:** November 14, 2002; 7:00 p.m. session

---

Current Land Uses Identified in the Project Area

- 1.0 Proposed budget for Management Activities.
  - 1.1 Periods for road maintenance/bridges
  - 1.2 Timber revenues back into stewardship
  - 1.3 No tax burden for towns
  - 1.4 Per ASC, some stewardship funds available
  - 1.5 Agreement with Dennysville: \$30K, dry hydrant, gravel and firehouse
- 2.0 Roads/Access
  - 2.1 Maintain very, very limited access
  - 2.2 Right-of-way access to corridor currently obtained over Haynes land
  - 2.3 Cathance Stream (keep access w/stewardship)
  - 2.4 Two specific private access points (head of river & Gilman Dam are the two existing points) should be maintained with no new access points developed in Project Area
  - 2.5 Access needs to be publicly owned – Can't assume that private access will be available
  - 2.6 Canoe access limited by time of year and temperature/flows
  - 2.7 Existing put-in and take-out is private. Replace those?
  - 2.8 Designated sites exist already
  - 2.9 Tourist attraction will increased use = big problems?
  - 2.10 Increased access = increased salmon impacts
  - 2.11 Barbara: Cater to those who don't know where access is by identifying it
  - 2.12 Bob: The mystique of finding/exploring the area on ones own is important
  - 2.13 Public access is more than vehicular access
  - 2.14 Limited and controlled access to inhibit NPS pollution
  - 2.15 Needed access through IP
  - 2.16 Until current private access is denied, developing additional access is not recommended
- 3.0 Salmon Conservation
  - 3.1 Should be number one priority
  - 3.2 Low impact use only

- 4.0 Stewardship
  - 4.1 Local Community (Watershed Council) are the eyes and ears
- 5.0 Any plan for future land acquisition?
  - 5.1 Make the answer part of the plan
- 6.0 Revisit/Update LMP – “Living Plan”
  - 6.1 Plan should indicate triggers/events/reasons to revisit and modify plan over the years
- 7.0 Canoeing
  - 7.1 Estimated Fifty trips/people/season
- 8.0 Camping
  - (much the same discussion as in first session)
- 9.0 Hunting/Trapping/Bear Bait
  - 9.1 Waterfowl, partridge, deer, bear, coyote
  - 9.2 Don’t make easier access; Leave as is
- 10.0 Fire Management
  - 10.1 Is air access enough?
  - 10.2 Strategies relative to roads
    - 10.2.1 Existing roads
    - 10.2.2 Suitable for fire management?
  - 10.3 Water source? River? What implications does this have for habitat impacts if used during fire fighting?
  - 10.4 Blueberry barrens – no irrigation demands on river
  - 10.5 Consider abutters – Don’t just let it burn
- 11.0 Water Quality
  - 11.1 Unknown
  - 11.2 Strategy for hazardous/unforeseen input/spill should be included in LMP
- 12.0 Tipping
  - 12.1 Done right – no problem – should be allowed
- 13.0 Forest Management
  - 13.1 Improve riparian function through proactive management
  - 13.2 MFS Skidder bridge program Are they used on smaller streams?
- 14.0 Recreation (ATV’s, Snowmobiles, etc)
  - 14.1 ATV’s are a potential problem
    - 14.1.1 Need to limit
  - 14.2 Snowmobiles are low impact
    - 14.2.1 Ice & Snow = minimal habitat impacts
  - 14.3 RR Tracks taken out to use for trails?
  - 14.4 Skiing from Gilman Dam accessed via 191
  - 14.5 No new trails were recommended
- 15.0 Deer wintering areas – have these been identified and will seasonal use impact them?
- 16.0 Purpose of Management Plan if salmon are gone?
  - 16.1 Maintain Habitat
- 17.0 Fishing
  - 17.1 Very little populations of trout
  - 17.2 No salmon
- 18.0 Hatchery
  - 18.1 Plans for a river-specific hatchery on Dennys River in LMP?
  - 18.2 Plan may identify potential sites

***Maine Atlantic Salmon Commission  
Dennys River Corridor Management Plan/Final Public Input Meeting  
E.D.M. Youth Center  
June 6, 2003 7 PM***

***MEETING MINUTES***

***ATTENDEES:*** Barbara Arter, BSA Consulting  
Dean L. Bradshaw, Dennys River Watershed Council  
Bill Cherry, Bill Cherry Forestry Services  
Jon Christensen, Kleinschmidt  
Norm Dube, Atlantic Salmon Commission  
Alan Haberstock, Kleinschmidt  
Bob Hinton, Downeast River Coalition & Dennys River Sportsman's Club  
Jon Reisman, Town of Cooper  
Matt Scott, Sportsman's Alliance of Maine  
Sheila & Barry Huckins, Dennys River Watershed Council  
Greg Mackey, Atlantic Salmon Commission  
Joel Pickelner, Quoddy Regional Land Trust  
Maurry Mills, Moosehorn National Wildlife Refuge  
Deane L. Bradshaw, Dennys River Watershed Council  
Greg Mackey, Atlantic Salmon Commission  
Norm Dube, Atlantic Salmon Commission  
Alan Haberstock, Kleinschmidt  
Allison Murray, Kleinschmidt  
Joel Pickelner, Quoddy Regional Land Trust  
Jon Reisman, Town of Cooper  
Matt Scott, Sportsman's Alliance of Maine  
Torrey Sheafe, Kleinschmidt  
James Sullivan, Town of Dennysville  
Bill Cherry, Bill Cherry Forestry Services  
Jon Christensen, Kleinschmidt  
Torrey Sheafe, Kleinschmidt  
Allison Murray, Kleinschmidt  
James Sullivan, Town of Dennysville  
Barbara Arter, BSA Consulting

***DATE:*** June 6, 2003; 7:00 p.m.

The purpose of this meeting was to gather final comments/input on the Dennys River Corridor Land Management Plan Draft version released May 1, 2003.

1. Summary of Major Comments
  - a. 4 out of 32 Advisory Group members submitted comments.
  - b. Recommended changes and/or clarifications were suggested on 7 out of the 12 chapters.
  - c. Most common comments included the following issues:
    - i. Fire Control
      1. Stakeholders suggested that there should be a periodic review and a standard survey conducted of potential fuel buildup within the corridor to minimize the risk of forest fires.

2. Several towns admit that their volunteer fire departments have limited and aging man/woman power and may not be equipped for fighting forest fires.
  - ii. Water Withdrawal
    1. Water withdrawal for the purposes of fighting fires should be permitted at the discretion of the on-scene responders. It was agreed, however, that this is not an issue appropriately dealt with in a *land* management plan.
    2. It was agreed that the Steward will be responsible for establishing priorities for water withdrawal for the purposes of fire suppression.
  - iii. Beaver
    1. It was suggested that the focus on beavers in the LMP should be expanded to include general wildlife.
2. Additional Comments
- a. Stakeholders suggested that the Steward should be responsible for ensuring that the Cathance Lake outlet fishway be kept free from debris to allow unobstructed fish passage.
  - b. Stakeholders fear that There should be a periodic review and a standard survey conducted of potential fuel buildup within the corridor to minimize the risk of forest fires.
  - c. Large populations of pickerel in Great Works Pond create a barrier to out migrating smolts and should be researched further. Habitat upstream of Great Works Pond cannot be utilized by Atlantic salmon until the pickerel populations are diminished.
  - d. Stakeholders pointed out that Water withdrawal for the purposes of fighting fires should be permitted at the discretion of the on-scene responders. It was agreed, however, that this is not an issue appropriately dealt with in a **land** management plan.
  - e. The focus on beavers should be expanded to include general wildlife.
  - f. Residential development of aggressively harvested adjacent lands is not currently happening, as stated in the plan, but has the potential to happen. Text should be modified to reflect the **potential** subdivision of lands.
3. Summary & Wrap Up
- a. Many comments were positive and encouraging.
  - b. The comment period will be expanded for 10 business days to allow for more input. The deadline for comments is June 20, 2003.
  - c. The classification of Habitat Protection Zones (HPZs) is protective with respect to harvesting and other potential vegetation removal or development activities and that was overwhelmingly favored by stakeholders.
  - d. Visual aids (GIS maps) were distributed to anyone who wanted them.
  - e. On behalf of the Atlantic Salmon Commission, Kleinschmidt thanks the Dennys River Watershed Council for assisting with the Dennys River Corridor Tour and arranging for meeting space at the E.D.M. Youth Center.

## APPENDIX D

### ASC ADMINISTRATIVE POLICY REGARDING LAND MANAGEMENT



Angus S. King, Jr.  
Governor

State of Maine  
**Atlantic Salmon Commission**  
650 State Street  
Bangor, Maine 04401  
Telephone: (207) 941-4449



Fred Kircheis  
Executive Director

**ADMINISTRATIVE POLICY  
REGARDING LAND MANAGEMENT**

The Atlantic Salmon Commission's primary objective for owning and managing property or holding interest in property within Atlantic salmon watersheds is to protect and enhance salmon habitat and water quality in the rivers and tributaries. Lands or easements held by the Atlantic Salmon Commission will be managed primarily to maintain ecological systems, protect wildlife and fisheries values, and allow for multiple uses. These include but are not limited to forest production; wildlife habitat and population management; hunting, trapping, fishing, and other land and water based recreation; research; and education. Forest management on ASC lands will have the objective of growing high quality forest products and reducing the risk of forest fires within the watershed. Activities on these lands will be conducted in a manner that does not degrade habitat and water quality.

---

Fred Kircheis, Executive Director



APPENDIX E

AGREEMENT WITH TOWN OF DENNYSVILLE

## APPENDIX F

### STEWARD POSITION DESCRIPTION

## Steward Position Description

The Steward will answer directly to the Executive Director of the ASC and is responsible for developing and implementing all aspects of ASC's land management plan contained in this document. This is a part-time (20 hours per week) position.

The Steward should be an individual with familiarity with Maine issues and ecosystems, forestry, habitat protection and land management. The Steward must understand the current issues facing the Corridors in order to support the stewardship program through the various land management programs.

Responsibilities of the Steward would include but not limited to:

- Define and develop plan for ASC stewardship program
- Develop and maintain a database of neighboring landowners
- Formalize ASC volunteer program (recruit volunteers, build database)
- Draft policies and procedures for major stewardship activities

Implement stewardship activities

- Periodically check properties for vandalism, inappropriate uses, safety hazards, trash, and encroachments
- Periodically check conditions of the boundary line and request additional maintenance, if necessary
- Monitor vegetation, water quality/quantity, wildlife presence/absence
- Develop and implement plant and animal habitat restoration, as appropriate
- Maintain and enhance capital improvements such as trails, gates, BMPs, including management of subcontractors and government permitting agencies
- Maintain and enhance natural habitat, including weed and noxious plant control, and native vegetation and tree planting

- Assess ecological conditions of protected properties and implement appropriate response, such as restoration or invasive species removal
- Organize and conduct advisory group meetings
- Coordinate volunteer work parties
- Conduct site monitoring and prepare Monitoring Reports, as appropriate but at least annually

#### Financial Development

- Work with the ASC Executive Director to focus fundraising campaign
- Recruit attendees, donors, and relevant decision-makers to fundraising and outreach events, and serve as Corridor spokesperson at fundraising and outreach events
- Secure adequate funding for long-term stewardship efforts
- Research and write grants for planning, stewardship and restoration activities
- Explore additional opportunities for supporting stewardship program, including funding for on-going monitoring activities and habitat restoration

#### Community Organizing & Outreach

- Cultivate relationships with members of the Dennys River Watershed Council, Dennys River Sportman's Club, municipalities, and Quoddy Regional Land Trust to further ASC's mission and goals
- Conduct tours of protected properties, by request
- Organize and implement outreach and stewardship opportunities on properties
- Coordinate stewardship and monitoring activities with educational institutions

- Meet and work with natural history groups, local community groups, government agencies, and other organizations to promote ASC and opportunities to work with ASC
- Provide technical support to cooperating organizations; coordinate and collaborate with government and conservation organizations on specific projects.

#### Public Relations and Education

- Distribute ASC publications to interested parties
- Conduct workshops, presentations and tours to commissions, government staff and policymakers, related organizations, service clubs, and interested groups

#### Administration

- Assist with preparation of the annual work plan and budget
- Maintain project records and files
- Communicate with board of directors and ASC staff, including participation at staff meetings and development of policies and programs
- Work with Advisory Committee and sub-committees
- Monthly accounting of activities, time and expenses
- Write articles for a newsletter and other publications
- Bring relevant issues and program activities to the appropriate committee
- Other duties as assigned

#### Qualifications

Required qualifications include a background in science and the environment, grant writing experience, project management skills, experience working with volunteers, and the ability to perform physical labor in natural settings. Must be self-directed, energetic and creative, and able to work with all types of people and community

organizations. Must own a reliable car or truck capable of transporting tools and supplies for stewardship activities. Enthusiasm and commitment to land conservation and the environment, an entrepreneurial nature, willingness to work some non-standard hours, excellent verbal and written communication skills, and strong computer skills required. Bachelor's Degree required, advanced degree or extensive field experience preferred. Knowledge of non-profit organizations, GIS/GPS technologies and public speaking abilities desirable.